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This Month: ACADEMY AWARD WINNERS

Also: Under Water With The Aquaflex • Ten Factors For TV Films

APRIL

1951

On location with Du Pont Film...

Superlative performance of "Cyrano" ... recorded on Du Pont "Superior" 2

"Cyrano de Bergerac" — the magnificent Stanley Kramer production released in November, starring José Ferrer, Mala Powers, William Prince and Ralph Clanton—is another of the year's outstanding pictures made on Du Pont Motion Picture Film.

In the off-stage still above. Director Michael Gordon (lower right) surveys the battlefield set-up for one of the choice scenes. At the camera finder is Frank Planer, A. S. C.—the man responsible for the excellent photography that made the picture an instant success and earned for him the Hollywood Foreign Correspondents Association "Golden Globe" Award for best black and white photography in 1950.

Du Pont "Superior" 2 is widely used by leading cinematographers because as an all-purpose negative rawstock it records faithfully the artistry of high- or low-key lighting technique. E. I. du Pont de Nemours & Co. (Inc.), Photo Products Dept., Wilmington 98, Delaware.

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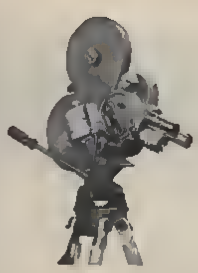

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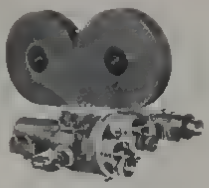

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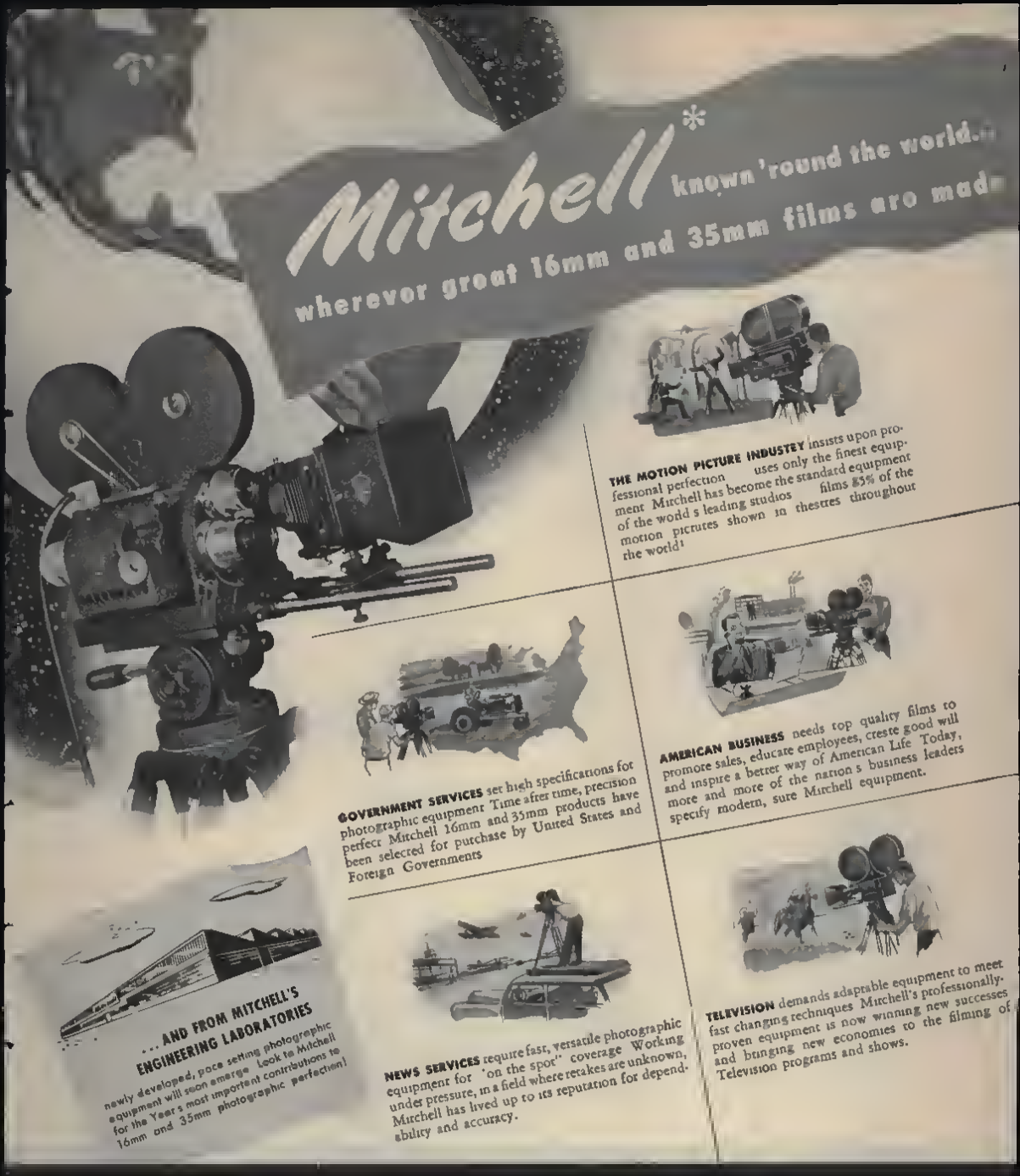
ON THE COVER

PERT DEBBIE REYNOLDS, M-G-M starlet, presents to Robert Surtees, A S.C., the 'Oscar' award of the Academy of Motion Picture Arts and Sciences for best achievement in color cinematography for *King Solomon's Mines* Academy's presentation ceremonies were held night of March 29th in Hollywood

AMERICAN CINEMATOGRAPHER, established 1920 is published monthly by the A S C Agency Inc 1782 N Orange Dr Hollywood 28 Calif Entered as second class matter Nov 18, 1937, at the postoffice at Los Angeles, Calif., under act of March 3 1879 SUBSCRIPTIONS United States and Pan American Union $3 00 per year Canada $3 50 per year Foreign, $4 00 Single copies, 25 cents back numbers 10 cents foreign single copies 35 cents back numbers, 40 cents Advertising rates on application Copyright 1951 by A S C Agency Inc.



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Hollywood
Bulletin Board

Metro-Goldwyn-Mayer following ten years of cooperative experimentation and development with Ansco, has launched its first production in Ansco Color. Titled *The North Country* and shot mostly in the state of Idaho, the photography is being directed by Robert Surtees, A.S.C.

The extensive program of color research at M-G-M was conducted jointly by John Arnold, A.S.C., the studio's executive director of photography, and J. M. Nickolaus, head of M-G-M's film processing laboratory

•

Charles G. Clarke, former A.S.C president, and one of 20th Fox's ace directors of photography, returned from Australia late in March after an absence of 8 months during which time he photographed *Kangaroo* for Fox, using Technicolor Monopack.

•

Karl Struss, A.S.C., upon completion of the photography of *The Secret Sharer*, starring James Mason, took over the photography of *A Lady Possessed,* which also stars Mason and which was begun in England. The picture will be completed in Hollywood

•

John Boyle, A.S.C., and **Charles G. Clarke, A.S.C.,** directed the photography of a complete film record of the 1950 Academy Awards presentation ceremonies which took place at the RKO-Pantages Theatre in Hollywood the evening of March 29th

Four Maurer 16mm professional cameras were used to photograph the proceedings in Kodachrome. To provide adequate illumination, Boyle and Clarke devised an ingenious arrangement of carbon arc spotlights fitted with shutters, and a system of telephone intercommunication between the lamp operators and the directors of photography.

Eastman Kodak Company, through the courtesy of Emery Huse A.S.C., donated the necessary 16mm Kodachrome film. The motion picture, which will be screened for Academy members late this month, was made for Academy archives.

Robert Pratt Young was appointed Manager of motion picture sales for Ansco last month to succeed Kneeland Nunan who resigned to accept a position with RKO's Hollywood studios. Formerly Eastern Sales Manager of Ansco's motion picture division, Mr. Young joined the company in 1945 as a salesman, later became assistant manager of the company's New York City branch. He will maintain headquarters at Ansco's sales office in Hollywood.

•

John Arnold, A.S.C., has developed a new camera heating device for Mitchell and Technicolor cameras. No larger than a cigarette pack, device transmits heat directly to camera's moving parts. Robert Surtees employed one on the camera he used last month at Sun Valley, Idaho, with excellent results. Other units are being made and will be fitted to all cameras on the lot.

•

Joseph Ruttenberg, A.S.C., has been elected a member of the American Standards Association sectional committee on standards for motion pictures. Scope of the committee is to formulate definitions, dimensional standards, methods of test and rating and performance characteristics of materials and devices used in silent and sound motion picture photography and in sound recording.

•

Reno, Nevada will add still another trophy to the parade of photographic awards which have been tendered directors of photography in the motion picture industry. This month, the Reno Silver Spurs Awards Committee will award a plaque and silver spurs for the western film produced during 1950 embodying the best outdoor photography. The award will go to the director of photography of the winning film

•

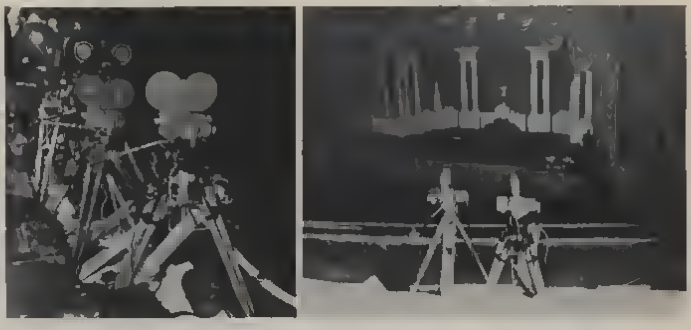
Carl Louis Gregory, veteran cinematographer and motion picture engineer, died at his home in California March 11th. Gregory worked with the old Edison Company in the Bronx as early as 1908, and later photographed *The Million Dollar Mystery*, famous silent film. He was also an ace newsreel cam... He was a member of the Edison Pi... S.M.P.T.E., American Society of ... matographers and a Fellow of the Ro... Photographic Society. His widow, Marie Gregory, and five sisters survive.

•

Ray Fernstrom, A.S.C., has just completed a series of tests of a new motion picture stereo system called Technorama developed by his brother, Carl E. Fernstrom. Tests were photographed in both black-and-white and color and, according to Fernstrom, no special developing, printing or projectors or special eyeglasses are required. Stereo effect is said to be achieved by the special camera, details of which are a closely guarded secret.

•

S.M.P.T.E. will hold its 69th semi-annual convention April 30 to May 4 at the Hotel Statler, New York City. Industrial, medical, and military applications of motion pictures and television, as well as their more familiar uses for entertainment, will be explored in more than fifty technical reports.



CAMERA SETUPS employed by John Boyle and Charles G. Clarke in photographing the 23rd Annual Academy Awards Presentation Ceremonies at RKO-Pantages Theatre in Hollywood, the evening of March 29th. Battery of four Maurer 16mm cameras was mounted alongside the newsreel cameras at balcony railing. Big arcs at either side of balcony furnished illumination

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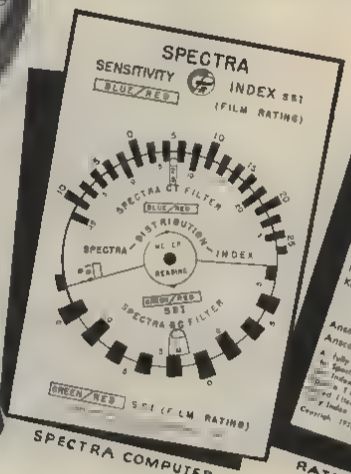

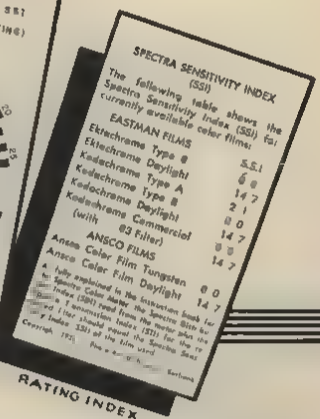

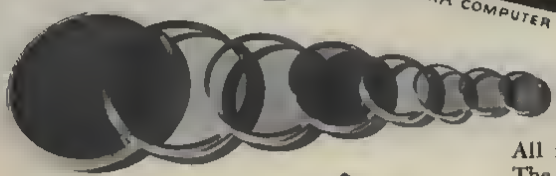

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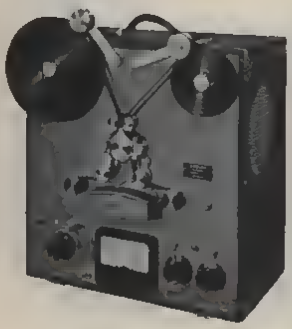

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WHAT'S NEW

in equipment, accessories, service

• **THE SENSITESTER** long has been famous as one of the most accurate devices for making light test strips and sensitometric strips which are used in the printing of motion picture films

Art Reeves, 7512 Santa Monica Blvd., Hollywood, has improved the Sensitester with several features, including an electronic timer and a new cold light source.

Supplied with the Sensitester is a set of instructions and a chart which greatly simplifies for the non-technical lab man the procedure for making light test or sensitometric strips

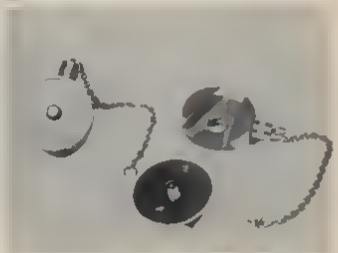
---

• **FAST CHANGEOVER** from high to low or low to high camera positions in a matter of seconds is a dominant feature of the Hydrolift Dolly. Camera position may be changed in approximately five seconds. The camera boom arm is actuated by a manually operated hydraulic cylinder pump. The dolly can also

be furnished with an electric pump. It will accommodate any 16mm or 35mm camera, with or without blimp, as well as any TV camera—and withstand up to 250 pounds in camera weight. Dolly is narrow enough to ride easily through ordinary doorway and compact and light enough for easy hauling in station wagon for location use

Manufacturer is National Cine Equipment, Inc., 20 West 22nd St., New York City.

• **FORGET THE TRIPOD SCREW** when you use the handy Johnson Kam-Lok camera mounting for tripods, which enables cine cameras to be quickly attached or detached from tripod in a jiffy. Kam-Lok is in two parts: one is screwed on the tripod, and is never removed. The top section is screwed into the tripod mounting hole of camera and can be left there. To mount camera on tripod, it is only



necessary to slide the two sections of Kam-Lok together. They lock automatically. To release, simply pull the chain release and slide the camera off. Manufacturer is General Photographic Supply Co., 136 Charles St., Boston, Mass.

• **NEW KODAGUIDES AVAILABLE:** Those handy pocket photographic exposure guides manufactured by Eastman Kodak Company have been completely redesigned and greatly improved for amateur photographers, both still and ciné. One is a Snapshot-and-Flash Kodaguide which incorporates a computer for outdoor picture taking by daylight and indoor photography by flash. The other is the Movie Kodaguide which provides compact, accurate and easy-to-understand data for exposure for both B&W and color films, indoors and out. The new Kodaguides, priced at 25c each, are available at most camera stores.

• **ADAPTER RINGS,** to fit new line of Bolex Kern-Paillard cine camera lenses are available from The Tiffen Mfg. Corp., 71 Beekman St., New York.

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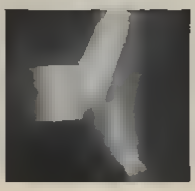

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TIL GABBANI, 20th Century-Fox cameraman is shown above in action under water with the new Aquaflex camera, shooting scenes for studio's production of "The Frogmen." This was one of few instances when camera was used without stabilizing wings and vertical fin

ft. film capacity and interior pressurization. Equally important are the detachable wings and vertical fin which aid greatly in transporting and stabilizing the camera under water. These and other features will be described in more detail later.

Use of the Aquaflex in filming scenes for *The Frogmen* marks the first use of this camera in any Hollywood feature film production. Previously, it had been used by the U S. Navy in producing a series of deep sea diver training films.

The studio elected me to handle the cinematography for the 2nd unit of *The Frogmen*, which journeyed to the Virgin Islands to shoot underwater scenes for the picture. Several weeks before we left for the islands, I had undertaken a number of practice sessions with the Aquaflex camera in the studio's swimming pool, getting the feel of it under water and learning the difference between underwater and above surface photographic essentials.

Continuing the trials after we reached the Virgin Islands, at first I used weights about my waist when submerging with the camera; however, I gradually found it easier to work without weights altogether after I became more accustomed

Under Water With The Aquaflex

New camera makes Hollywood debut recording scenes for "The Frogmen."

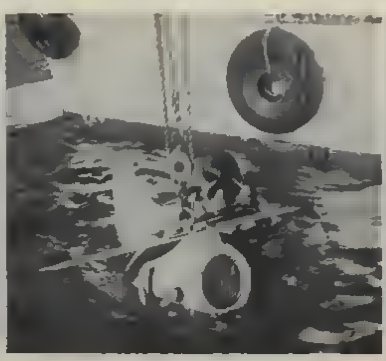
By TIL GABBANI

WHEN 20TH CENTURY-FOX STUDIO wanted to photograph important underwater action sequences for its production, *The Frogmen*, it chose the Eclair Aquaflex camera—the only motion picture camera which seems to meet all the major qualifications for successful underseas photography. Among these are such important features as exterior manual controls, reflex viewfinder, 400

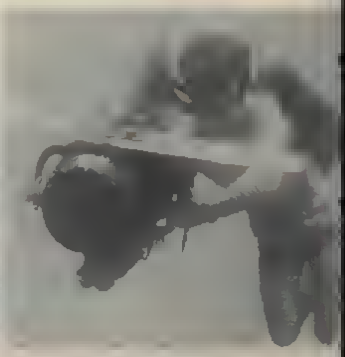
to the balancing and planing qualities inherent in the unusual design of the Aquaflex.

To successfully work with this camera under water, three important accessories

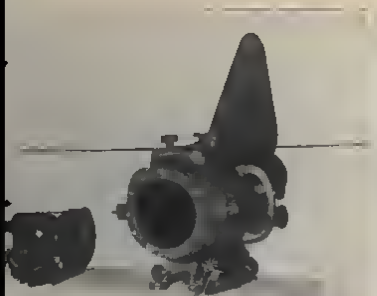
GABBANI, equipped with compressed air diving unit and face mask, makes ready to descend into ocean.



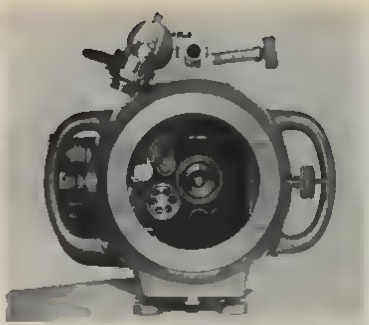
AQUAFLEX camera is lowered into water by tackle as Gabbani prepares to take it below surface.



UNDERWATER, the pressurized camera is buoyant, planes easily, thanks to wings, fin.



VIEW of Aquaflex camera housing out of water and the Eclair camera unit at left



FRONT view showing plastic photographing port and the control gears inside, and air cylinder on top

DIAL KNOBS at side control lens settings, motor speed and start and stopping of camera motor.

are required by the diver-photographer: (1) the French Aqualung—a self-contained compressed-air breathing system or diving unit; (2) a Squale face mask, and (3) a pair of Swimfins for the feet.

Over a year ago the Navy had given the Aqualung exhaustive tests and had found it to be a completely automatic and dependable diving unit.

Having a separate mouthpiece and a breathing hose, it is ideally suited for use with the Squale face mask. It is particularly ideal because it leaves the diver-photographer's hands free to operate the camera and his mind free to concentrate on his camera work.

Using this diving unit, I worked with the Aquaflex camera at a depth of around thirty feet. The water near that area of the Virgin Islands (St. Thomas) is extremely clear and perfect for underwater photography. There is a vigorous surge of the water at that depth, however, which made it impossible to make steady camera shots without aid of some sort of body support. To remedy this, we constructed and lowered to the ocean floor a heavy weighted platform with a rigid telescoping upright of tubular steel. To this upright was attached a metal piece in the shape of a U. When I slipped into this, it gave my body the necessary support against the ceaseless surge of the sea. The device thus enabled me to make smooth pan or static shots with the camera where action was to be filmed from the ocean floor.

Of course, other shots called for operating the Aquaflex while moving it through the water. Here the camera's unique arrangement of external wings and vertical fin proved its superiority for underwater photography. The fin and wings make it possible to guide the camera with one hand, using the other to aid in swimming. The wings provide a planing surface sufficient to keep the camera level or on any directed angle under water. Thus, I could focus on my subject through the camera's reflex finder, kick my flippered feet and guide myself by tilting and banking the camera in a manner similar to a plane in the air.

The Aqualung, with its three cylinders of compressed air, enabled me to remain under water for periods as long as two hours. To keep an accurate check on the time while submerged, I wore a waterproof watch. However, the Aqualung provides an automatic indicator which signals when the compressed air supply is running low, and there is a 15-minute reserve supply that can be turned on when this warning occurs.

In order to escape the "bends," an ailment common to those engaged in deep sea diving, I made it a point always to take at least five minutes to rise to the surface after submerging for any length of time. Surfacing too rapidly causes one's blood vessels, which contract under water, to expand too rapidly and take air into the bloodstream, with serious results.

The Eclair Aquaflex is the only camera manufactured specifically as a self-contained, motor-driven, underwater motion picture camera with external controls for the lens and motor, and having interior pressurization. It weighs approximately 107 pounds out of the water. One of its most favorable features is the fact it is entirely independent of air supply lines and electric cables leading to the surface. It is the only underwater camera that carries a maximum supply of 400 feet of film, and the only one affording quick reloading of film. After the camera has been surfaced, it requires less than four minutes to open it, reload it with film

(*Continued on Page 155*)

ON LOCATION scene during shooting of "The Frogmen" underwater sequences in Virgin Islands. Director gives frogmen last minute instructions before they go below to be photographed by cameraman Gabbani.

DERRIE REYNOLDS, M-G-M starlet, presented Academy "Oscars" to Robert Surtees, A.S.C., (right) for achievement in color cinematography, and to William Milne Guthrie, British Consul attache, who accepted for Robert Krasker, British cinematographer cited for black-and-white cinematography

1950 Academy Awards

By ARTHUR E GAVIN

HONORS FOR Academy cinematography awards were divided equally this year between Hollywood and Great Britain. Robert Surtees, A.S.C., who photographed M-G-M's *King Solomon's Mines* in Technicolor, received the Academy's 1950 award for Best Achievement in Color Photography. Robert Krasker, a member of the B.S.C. and who photographed *The Third Man* for Selznick Enterprise-London Films in England, was honored with the 1950 award for black-and-white photography. In his absence, the award was accepted by William Milne Guthrie of the British Consulate in Los Angeles.

For Robert Surtees, the award — his first "Oscar," incidentally — marks the fourth he has received for *King Solomon's Mines*. Following the picture's initial release in Los Angeles, The American Society of Cinematographers cited Surtees for its Picture Of The Month photographic award for November, 1950. Later, he was presented with the Look Award for best cinematography of the year, and subsequently received the Golden Globe Award of the Hollywood Foreign Correspondents' Association for best color photography for 1950. Surtees thus becomes the first director of photography ever to win four cinematography awards for a single motion picture.

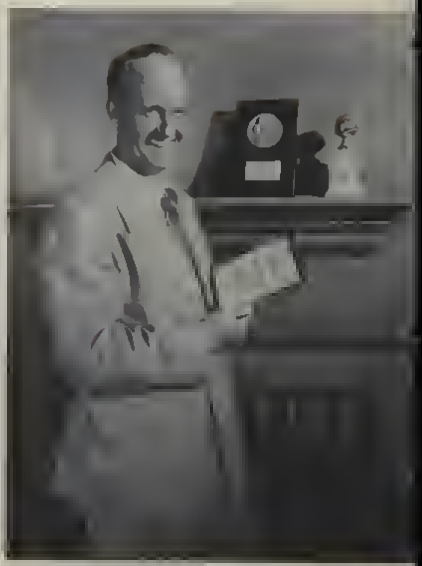
The 1950 Award for black-and-white photography is Robert Krasker's first "Oscar." Krasker is a protegé of Georges Perinal and a director of photography in British studios for several years. Earlier he had worked with several American directors of photography in London studios, including Charles Rosher and Harry Stradling. He has a wide reputation for truly imaginative camerawork, and it was the very uniqueness of his lighting and cinematography of *The Third Man* that attracted the Academy's membership which voted him that 1950 award.

Unique is a totally inadequate word to describe the cinematography of *King Solomon's Mines*, yet this picture will be remembered for a long time for its original and unparalleled camera treatment which translated to the screen the virgin, natural atmosphere of a little known land and yet never transcended the personalities of the players or the very story itself. There is a fine balance between the pictorial and the action.

Receiving an Academy Award marks a very important milestone in the career of a director of photography, as it does for others in the industry similarly rewarded. It is generally considered that with an "Oscar" on your mantle, you have at last "arrived." However, Metro-Goldwyn-Mayer heads will tell you that Robert Surtees arrived a long time ago, and that his photography assignments each have proved an outstanding success. To his credit is the photography of such outstanding M-G-M film hits as *Intruder In The Dust, That Midnight Kiss, Big Jack, Act Of Violence, The Kissing Bandit, The Unfinished Dance, Our Vines Have Tender Grapes*, and others.

Surtees has been a director of photography in the major studios only since 1942. Previously he had been a first cameraman for various Hollywood independent producers and an assistant to some of the industry's top directors of photography, including Hal Mohr, Joseph Valentine, Jackson Rose and Charles Stumar. It was inevitable that he should eventually rise to their ranks. When he did, in 1942, he was immediately signed by M-G-M where he has been associated ever since.

Already Robert Surtees has staked a claim on the 1951 Color Cinematography



ROBERT SURTEES, A.S.C., prior to receiving "Oscar" for achievement in color cinematography for his filming of "King Solomon's Mines," already had received three awards for the same picture: the A.S.C. Picture of the Month award, which he is holding; the Look Award (plaque on mantle) and the Golden Globe Award for color photography (also on mantle).

award with his fine photography of M-G-M's *Quo Vadis*, produced in Italy last summer. It will take an unusual competitive production, his associates say, to nose him out of the running when Academy Awards are passed out next year.

In all, ten 1950 productions were nominated for cinematography awards by the Academy — five color and five black and white. The eight directors of photography who also had nominated pictures in the running, each have received a Nomination Certificate from the Academy. These cinematographers are:

Milton Krasner, A.S.C., *All About Eve*, Fox.

Victor Milner, A.S.C., *The Furies*, Paramount.

Harold Rosson, A.S.C., *The Asphalt Jungle*, MGM.

John F. Seitz, A.S.C., *Sunset Boulevard*, Paramount.

George Barnes, A.S.C., *Samson and Delilah*, Paramount.

Ernest Haller, A.S.C., *The Flame and The Arrow*, Warners.

Ernest Palmer, A.S.C., *Broken Arrow*, Fox.

Charles Rosher, A.S.C., *Annie Get Your Gun*, MGM.

"OSCAR"
Annual Trophy Award of the American Motion Picture Industry

All About Eve won the 1950 Academy Award for Best Picture Of The Year. Produced by 20th Century-Fox Film Corp. It was photographed by Milton Krasner, and, as indicated above, was among the black-and-white pictures nominated for a cinematography award. A considerable measure of credit for the success of this picture must go to Krasner, and it is safe to say that it gave *The Third Man* a tough race for photographic honors in the black-and-white class when it came time for Academy members to vote an "Oscar" in this category. The picture won a total of six Academy Awards: Best Picture, Best Supporting Actor (George Sanders), Best Directing (Joseph L. Mankiewicz), Best Screenplay (Joseph L. Mankiewicz), and Best Black-and-White Costume Design (Edith Head and Charles LeMaire).

The Academy made three awards this year for scientific and technical accomplishments in the industry. Normally these awards are granted in three classifications. There were no 1950 awards in Class 1. In Class 2, James B. Gordon and the 20th Century-Fox Camera Department were cited for the design and development of a Multiple Image Film Viewer. This device, too involved to be described fully here, has its application in the Special Photographic Effects Department of studios. Other major studios are reportedly interested in adapting it to their needs.

Also in Class 2 John Paul Livadary, Floyd Campbell, L. W. Russell and the Columbia Pictures Sound Depart-

(*Continued on Page 148*)

★ ★

Frank Planer, A.S.C.--Golden Globe Award Winner

The Hollywood Foreign Correspondents' Association, this year voted the photography of *Cyrano de Bergerac* the best of black-and-white pictures produced during 1950, and subsequently presented Frank Planer, A.S.C., who directed the photography, with the Association's Golden Globe Award.

Planer won a Golden Globe Award last year for his photography of *Champion*, which also was in black-and-white. It marked the Association's initial presentation of awards to the motion picture industry.

Oddly enough, although *Cyrano* was considered for nomination for a photography award by the Academy of Motion Picture Arts and Sciences in the initial balloting, it failed to be nominated, although José Ferrer's performance in the picture was nominated and subsequently cited for an award.

In his acceptance speech the night the awards were presented in Hollywood, Ferrer, speaking from New York, lauded Frank Planer, among others, for contributing to his success in the role which won him an Oscar. It goes without saying that Planer's meticulous cinematography contributed no little to José Ferrer's success in a magnificent screen role. And besides he has a Golden Globe Award to show for it—and two in a row to prove he's in a winning stride.

An intense and extremely conscientious little man, whose cinematography career began in the motion picture studios of Europe, Planer came to Hollywood in 1939 and for years was a director of photography for Columbia Pictures. More recently he has free-lanced. That it has paid off is evidenced by his winning two Golden Globe Awards in a row.

FRANK PLANER, A.S.C., Filmed "Cyrano"

★ ★

TWO SHIPS were used by DeVinna in filming flight scenes for "Air Cadet"—an F80 Jet and a B45 Bomber. Above photo shows how camera was mounted in door of the B45.

CAMERA, mounted in the trainer version of an F80 Jet, is shown at right. This required addition of heavy dural bar bolted to frame of ship to resist terrific increase of gravity in flight.

Aerial Photography--1951

An old hand at filming air scenes, Clyde DeVinna surmounts some interesting problems photographing jet planes for U-I's "Air Cadet."

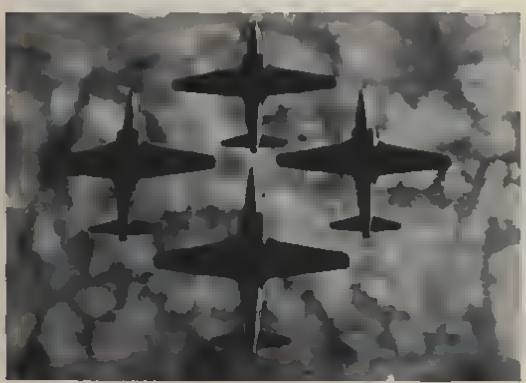
By CLYDE DeVINNA, ASC

"THEY WENT THAT-A-WAY!"—a familiar statement credited as a stock dialogue phrase for early-day "westerns," has a brand new and most interesting application these days in the photography of jet planes. How aptly it fits occurred to me when filming air sequences for Universal-International's *Air Cadet*, a timely story about jet plane pilots and the men who train them. Behind a camera mounted in one of Lockheed's famous Shooting Stars and later in one of the even faster flying Boeing B45 jet bombers, I photographed jet trainers in all manner of maneuvers, including sensational aerial acrobatics.

Most of the exterior and aerial scenes were photographed at the U. S. Air Forces' three principal training bases. Open sequences showing the indoctrination and primary training of Air Cadets were filmed at Randolph Field, long known as the West Point of the air. There the old reliable T6 trainer is used. We spent about ten days getting the necessary air shots and process plates required in the opening sequences of the picture. Lt. Earl Bryant, USAF, piloted the camera ship and did a magnificient job.

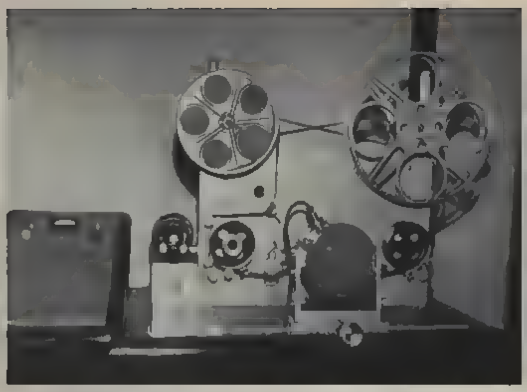
We then moved to Williams Air Force Base, near Chandler, Arizona, the locale of the majority of the story. Here we got our first look at the Lockheed F80, the formidable jet fighter which has set a magnificient record in Korea. Here Major Bruce Carr, USAF, was assigned to pilot the camera ship. Not only did his kindliness and understanding of our problems make the task easier, but he contributed a great deal in ideas and suggestions in the many planning sessions held before shooting started. His remarkable camera knowledge and grasp of camera angles was a pleasant surprise,

(*Continued on Page 150*)



DeVINNA and jet pilots flew many hundreds of miles in search of a "buttermilk" sky against which to stage the jet plane formations. The cloud contrast was necessary to point up the planes' speed.

FILMING the Acrojets proved the most interesting and exacting part of this assignment for DeVinna. So precise is the handling of the jets in these manuevers that wing tips are often not more than 18" apart.



MODULATION WRITER designed by Loren L. Ryder, which traces pattern of sound recording modulation on surface of magnetic film or tape as aid to editing. Tracing is made after tape is recorded.

SCRIBER, working on principle of ball point pen and shown at (1), scribes visual sound on magnetic film in the form of a varying amplitude ink line (2) in exact sync with the original modulation

Editing Magnetic Sound

New modulation writer scribes sound track pattern on magnetic film or tape, making editing as simple as with optical sound tracks.

By LOREN L. RYDER, ASC

Director of Recording and Engineering, Paramount Studio

VISUAL SOUND on magnetic film has not only simplified editing, but it has made editing faster and less expensive. New techniques make the film immediately available, eliminate tedious mechanical procedures and improve the sound quality.

The basic techniques described in this article apply to all sprocket driven magnetic films — namely, 35mm, 17½mm and 16mm. For reasons of economy and convenience in handling, the writer recommends the use of 17½mm magnetic film to accompany 35mm picture and 16mm magnetic film to accompany 16mm picture. However, many completely satisfactory 35mm releases have been made from 16mm magnetic film, and 17½mm magnetic recordings are used to accompany 16mm pictures. In some cases and for certain steps in the procedure, the writer also recommends the use of ¼" magnetic tape synchronized by the Fairchild PicSync process (described in American Cinematographer, January and February, 1951).

The production example used in this article is a twenty-eight minute television show photographed on 35mm film and recorded on 17½mm magnetic film traveling at 90 feet per minute. It is assumed that production shooting will involve 10,000 feet of magnetic film, 5,000 feet of print takes and the show will edit down to 2,500 feet for release.

Upon completion of each day's shooting, the editor using a magnetic sound reader or magnetic Moviola, will break out and splice together all print takes. The technique at Ryder Services is to protect the original recording by making a ¼" synchronous tape duplicate recording which is stored and used for reprints. The next step is to run the roll of print take original through the modulation writer. This scribes visual sound on the film in the form of a varying amplitude ink line in sync with the original modulation.

The editor synchronizes the picture daily to the previously spliced roll of scribed magnetic original. The picture and sound can then be edge coded and the film is ready for editing. The editing procedure, except for the manner of splicing, is the same as editing photographic film. The editorial cutting print is in all cases used for dubbing as it is not subject to quality and dirt deterioration from handling.

In the case of telephone line recordings or rush work the protection and scribed film can be ready for editing within an hour following shooting. It is always available before picture daily. Reprints from the ¼" tape are immediately available by the simple procedure of electrical transfer. This eliminates the cost of a sound negative, negative processing, negative cutting and the dubbing print.

Shown below are comparative costs:

Old Photographic Negative-Positive Process			
10,000 ft. 35 mm photographic sound negative	@	.0182	182
10,000 ft 35 mm photographic sound negative processing	@	0175	175
5,000 ft 35 mm photographic sound contact print	@	03728	186
2½ reels 35 mm negative matching	@	20.	50
2,500 ft 35 mm photographic dubbing print	@	03728	93
Total Cost			$686
Ryder Magnetic Film Method			
5,000 ft. 17½ mm magnetic film cut takes, film used 10 times	@	.0026	13
5,000 ft. 17½ mm magnetic film print takes, film used 2 times	@	013	13
5,000 ft transfer to ¼" tape	@	.0055	28
4,170 ft ¼" tape @ 15" per minute, tape used 10 times	@	.000264	1
5,000 ft modulation writing	@	0028	14
Total Cost			$121

(*Continued on Page 156*)

TYPICAL TV film production scene at the Jerry Fairbanks Studio in Hollywood, which is currently one of the busiest video film producers on West Coast. Here the famous Fairbanks' Multicam system is shown in use in which several cameras shoot scene at same time but each in a different camera movement

Ten Basic Factors Of TV Film Production

A summary of proven procedures for making television films of top photographic quality.

By ARTHUR L. MARBLE*

SO MUCH OF WHAT has been written about the techniques of video film making must of necessity be tentative, for few scientific fields are changing so fast and so steadily as television. Following the relatively short period which comprises the history of the television film industry, survivors of this exploratory period agree that there are certain fundamentals now well established which should be followed in making a film for TV that will register satisfactorily on the home receiver. This is important not only to the men who photograph such films, but to the producers and the script writers of TV film productions.

If television has taught film makers nothing else, it has made it abundantly clear that there is a marked difference in many of the techniques that apply to photographing films for video compared to making movies for the theatre. The result of a recent analysis of the most advanced techniques followed by present day TV film makers is boiled down in the following brief summary which comprises ten guides for making films for television. The first five apply more to general principles, while the remaining five deal more with the specific items of television film production, especially the photography.

1—*The Special Film Requirements of Television* should be carefully studied before production is started on any films for the medium. Television is enjoyed mostly by families in the informal atmosphere of the living room. Thus TV films should be geared, psychologically, more to the interests of the individual and small groups rather than to crowds, as in the theatre. The special requirements for video films may be studied in a number of ways: A—become a television fan yourself, along with the kiddies—but of course on a higher, more critical level; B—read everything you can in books and technical publications dealing with the subject; C—talk with experts in the field, including other cinematographers and television studio engineers; and D—make one or more short experimental TV films, based on your studies, and submit it to rigid criticism before undertaking full scale TV film production.

2—*Make Sure of Distribution Facilities.* There are a great many excellent motion pictures which have been made for TV that have never been given general release because proper distribution facilities were not available, or—to put it in other words—they lacked a commercial sponsor. Without a sponsor or a distribution tieup, a commercial TV film is a dead item. Too many producers have gone into the production of TV films without having a definite outlet for their product, with the result that their careers were cut short, often before their talents for the undertaking were given a fair chance to develop.

LESTER MANNIX, ace TV newsreel cameraman for WPIX, New York, readies his camera for a shot in corridor of Brooklyn courthouse. Mannix uses Filmo 16mm camera and latest type portable light unit

*Producer, *Hollywood Sports Show* and *The Pride of Palomar* TV films

3—*"Movies For TV Are Just Good Movies"* is a statement too often made and one not wholly true. While motion pictures, whether for the theatre or TV, are essentially only light and shadow on the screen, the basic principles of photography for theatrical films cannot be followed entirely for television. The technical problems of transmission inherent with TV have raised new problems of lighting and of camera handling in making TV pictures. There is an excellent discussion of the vital subject of lighting for TV films, as well as other related subjects of importance, in John H. Battison's new book, *Movies For TV*, (Macmillan).

4—*Professional Equipment Gives Best Results* in producing motion pictures for television. Experienced cinematographers will recognize the importance of this statement; but so much amateur camera work has marked the production of early TV films, that it is extremely important for those about to undertake TV film production as a career to understand its importance, too. Even though today the screens of most TV receivers are relatively small, screen size is expanding as new sets appear on the market. As screen size improves, it is imperative that the standards of TV picture quality improve also. Thus, anyone planning a future in the production of films for TV should consider only the very best camera, sound and lighting equipment for such productions to insure that film image and sound quality keep pace with receiver improvements.

5—*Knowledge of Screen, Stage and Radio Techniques* will go a long way to insure success for the TV film producer or cameraman. To a considerable degree, television combines all three of these theatre arts, and presents problems that can properly be solved only through knowledge of how to blend the techniques of the three fields in making a motion picture that resembles, yet differs as widely from the three close relatives, as a child may differ from its parents.

We cannot agree, therefore, with John Battison when he claims that "every person, once he has been in television a year or more, is somewhat of an expert if he has only common sense and powers of observation." Such "experts" may acquire some knowledge of the technique of making video films in one year, but to master the new art takes as long as it takes to master stagecraft, theatrical film photography or radio techniques—perhaps a lifetime. There is a difference between becoming a mere technician and a master of any field.

6—*16mm Film is Adequate* and in many ways preferable for television.

(*Continued on Page 148*)

Television Film Production

By LEIGH ALLEN

The Growing Use of Films on television is clearly indicated in the schedule of films released recently for the week of March 25th in Los Angeles, which included a total of 58 motion pictures which were televised during the folowing seven days by that area's seven TV stations. Most of the films were major features.

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Richard Moore, manager of KECA-TV and director of television for ABC's western division, speaking before members of the American Society of Cinematographers March 4, said his company very soon will launch an extensive schedule of TV film production, using the facilities of its vast television center in Hollywood — the former Vitagraph Studios of silent picture days.

In direct contrast to views expressed earlier by other TV executives, Moore told the Cinematographers that there very definitely is a future for films in television, citing the success of film programs on ABC television stations. He also pointed out that at present 14 of the nation's top TV programs are regularly presented via motion pictures, and said that he was being very conservative in estimating that 5000 hours per year of TV films will be required in the not too distant future.

ABC's old Vitagraph lot is the scene of many "firsts" in motion picture history—the first "talkie" made in Hollywood was filmed there. Now it is about to undertake production of the first films for television made by a television studio.

Already, ABC has drawn upon the motion picture industry for the first of its technicians. Sometime ago it signed William O'Connell, A.S.C., as director of lighting.

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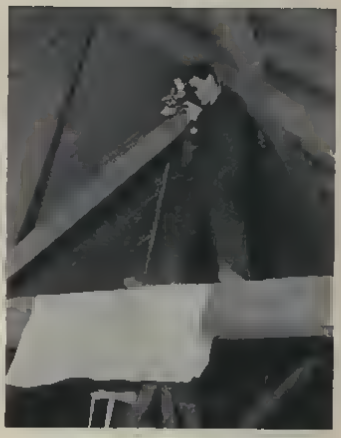
Attributes and Characteristics of DuPont motion picture films both 16mm and 35, adaptable to the peculiar needs of television are explained in a data sheet recently released by DuPont Photo Products Department. The company offers for picture production in 16mm its Type 330 rapid reversal panchromatic film. In 35mm, Types 104, 126 and 127 are recommended. For sound recording in 16mm, DuPont recommends its Type 802-A — comparable to Type 201 in 35mm. For release prints, Type 825-A (16mm) and Type 825-B (35mm) are the DuPont recommendation.



RESOURCEFULNESS is a prerequisite for TV newsreel cameramen, as demonstrated by this shot of Nicholas Sarrentino, WPIX TV newsreel cinematographer, filming scenes in hastily improvised morgue following eastern train wreck. A stepladder, and a tablecloth to protect his clothing, enabled Sarrentino to climb high in the rafters to secure dramatic shots from elevation free from the chaos and milling rescue workers on the floor.

Television in Mexico is making great strides, according to Benjamin Berg, U. S. Representative for Eclair-Paris, who recently returned from Mexico City. He reports that Don Emilio Azcarraga, one of principal owners of Churubusco motion picture studios in Mexico City, is presently constructing a TV studio and transmitter which will be one of the largest in the world, and entirely General Electric equipped. Azcarraga declared he expects to draw heavily on the motion picture industry for his technicians, because he feels that television is more closely related to motion pictures than it is to radio. His plans call for extensive use, and production of, films for his station's TV programs, which also will be made available to other Latin-American TV stations.

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Camera Assignments: The following are some of the directors of photography who were engaged in photographing major television films in Hollywood during the month of March:

Harold Stine, Jerry Fairbanks Prodns.

Lester White, A.S.C., Jerry Fairbanks Prodns.

(*Continued on Page 161*)

Vital Tool Of Engineering Labs

Motion picture cameras record effect of stress and strains on critical apparatus and parts in laboratory tests, thus aiding engineers in designing more rugged equipment.

By RALPH LAWTON

UNITED STATES industrial progress has been greatly accelerated in recent years through the increasing application of motion picture photography in the analysis of motion—motion beyond the perception of human vision or motion so rapid it must be slowed to permit normal visual study.

For this specialized work, almost every type and make of motion picture camera, both 16mm and 35mm, has been employed. The preferred camera for this work, however, is the ultra-speed motion picture camera such as the Fastax or the Eastman High-Speed. Either will record pictures at 3,000 frames per second or more.

High speed motion pictures have greatly speeded up production because they have speeded up research, which invariably precedes all major industrial production. Thus, instead of waiting months for a test model of some apparatus or instrument to complete a field test or to be observed over a prolonged period under normal working conditions, the stress and strains to which such equipment is normally subjected is reproduced in the engineering laboratory under the critical eye of a high speed motion picture camera. The film record is available for almost immediate study on the motion picture screen. Projected at normal speed, it affords a visual study not possible by other methods.

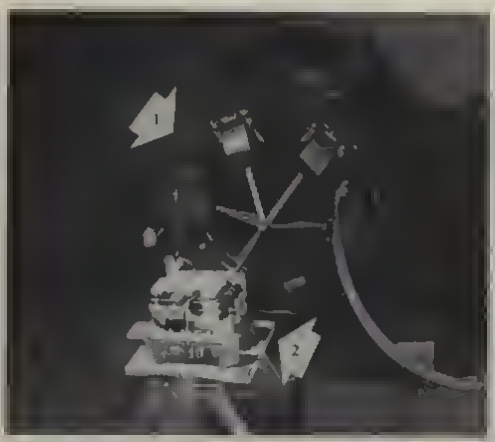
The demand for this type of production study has been greatly accelerated by our current defense preparations. Speed is so vital there is not the time for field tests. Manufacturers supplying our Armed Services with war equipment must know the answers now—and these answers are coming fast through the medium of motion pictures.

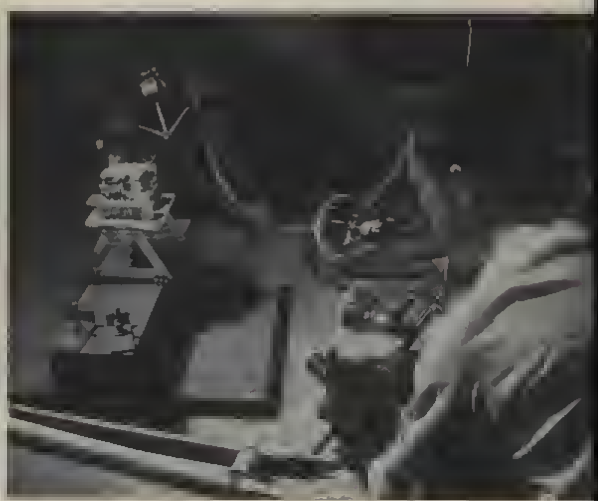
One interesting industrial application of motion picture photography is that employed in the Aircraft Department of the Westinghouse Small Motors Division at Lima, Ohio. The problem was how to study the effect of intense vibration on complex electrical equipment which the company makes for aircraft. It was solved by subjecting the equipment to approximate vibration conditions in the company's laboratory while a Fastax high-speed camera recorded, highly magnified, the complex electrical mechanism during the vibration period.

A small circuit breaker, which the company now has in production, was recently subjected to this vibration test. As shown in accompanying photos, this was mounted on a substantial base with free lateral movement. Suspension was found the best method of mounting. The circuit breaker was subjected to from 20 to 1,600 impulses a second from a special generator.

The principle of operation is as follows: By means of an electrical frequency oscillator, an alternating voltage is produced in the frequency range 20 to 1,600 cycles per second. This voltage is impressed on a vacuum tube amplifier whose output is delivered to the vibration motor, which converts electrical oscillations into magnetic vibration.

(*Continued on Page 154*)





WESTINGHOUSE Electric Corporation employs motion picture photography to aid its engineers in testing complex electrical equipment. Shown at right is engineer recording a vibration test with a Fastax high speed camera. Equipment being tested — a small circuit breaker for aircraft electrical systems — is shown above at (2) being subjected to high frequency vibration by generator (1). The action, recorded at high speed, is then screened in slow motion for engineers' study.

TWENTY-THIRD ANNUAL AWARDS

J. E. BRULATOUR, INC.

Congratulates

The Directors of Photography

NOMINEES

Best Photography Color 1950

CHARLES ROSHER, A.S.C.
Metro-Goldwyn-Mayer
"ANNIE GET YOUR GUN"

ERNEST PALMER, A.S.C.
Twentieth-Century Fox
"BROKEN ARROW"

GEORGE BARNES, A.S.C.
Paramount
"SAMSON AND DELILAH"

ERNEST HALLER, A.S.C.
Warner Brothers
"THE FLAME AND THE ARROW"

The Winner—

ROBERT SURTEES, A.S.C.

METRO-GOLDWYN-MAYER

"KING SOLOMON'S MINES"

OPERATIVE CAMERAMEN **JOHN SCHMITZ - FRANK PHILLIPS**

ASSISTANT CAMERAMEN **PAUL KOONS - GENE POLITO**

FOR

TECHNICOLOR

HENRY IMUS
Technician

ALFRED BAALAS
Assistant

ACADEMY OF MOTION PICTURE ARTS AND SCIENCES

TWENTY-THIRD ANNUAL AWARDS

Congratulations

to

ROBERT SURTEES, A.S.C.

Winner of the 1950 Academy Award

for Color Cinematography

"KING SOLOMON'S MINES"

Color by TECHNICOLOR

(Metro-Goldwyn-Mayer Pictures)

TECHNICOLOR

IS THE TRADE MARK OF

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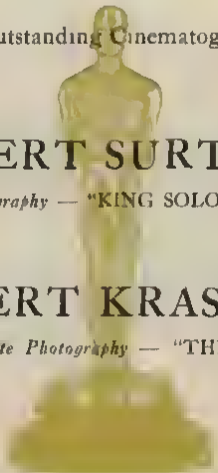

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The Use Of Reflected Light

Reflectors become important accessories for the serious cineamateur seeking professional quality in his camera work.

By CHARLES L. ANDERSON
Supervisor Shorecrest Productions, San Francisco

QUICKLY impravised reflector made of cardboard panel and sheet of aluminum foil aids Long Beach Cinema Club group in shooting a scene on location. The reflected light softens shadows on player's face.

PROFESSIONAL reflectors vary in style and manufacture. Shown here is a particularly rugged type made of sheet metal with tubular metal frame. One side is surfaced with aluminum paint, the other with metal foil.

REFLECTORS supply booster light where electric lights could not be used for the purpose—filming a scene on a lake. Shown are the standard type reflectors coated on both sides used by most Hollywood studios.

In Hollywood, every exterior scene is shot with the aid of booster light. This is supplied either by reflectors, which reflect sunlight into the shadow areas of the scene or subject, or by booster lights, which are regular studio lights moved to the outdoor location to supply additional illumination to smooth out the shadows. Before studio lights were introduced for this purpose, the studios used reflectors; and even today reflectors are still used in remote locations where it is impractical to use studio lamps.

Eventually, every amateur movie maker adopts the use of reflectors in shooting scenes out of doors in sunlight. And he should, if he aims to achieve the photographic quality of the professional; for there is no surer label of a neophyte's photography than shots of people made out of doors with heavy shadows obscuring facial features, or of scenes made in shade where the color is greatly distorted because of lack of proper light intensity, which sometimes affects the color temperature and consequenrly the final screen result.

Perhaps the reason more amateurs fail to employ reflectors is because they are not generally for sale as standard photographic equipment in camera stores. But this need not deter the ambitious movie maker, for he can easily construct his own. Basically, a reflector is a panel of rigid material, such as plywood, wallboard, etc., coated with a highly reflective material such as aluminum foil, aluminum paint, flat white paint, etc. Its purpose is to reflect sunlight, and it should do this in a semi-diffused manner and without creating hot spots.

Many cine amateurs will start with nothing more than a sheet of white cardboard, perhaps for reflecting light into a subject's face for a closeup. The next step is to paint one side of a panel of cardboard with aluminum paint. Then, once results are noted on the screen, reflectors become a must for all future outdoor photography. It generally follows that

(*Continued on Page 158*)

IF YOU record your own sound track on magnetic tape or film, you can dub in the background music, using two recorders as did Louis Barnett for Cincinnati Movie Club's first sound film

KIT OF sound effects records is available from Sears, Roebuck & Company, which affords wide range of musical fanfares, background music, you can rerecord for your sound films. Also included are numerous sound effects—all on 78 rpm discs

Music For Films

How to meet the problems you will encounter when adding music to your first sound film.

By CHARLES LORING

MUSIC FOR FILMS becomes increasingly important to the advanced amateur as he progresses in serious film making. Any effort to present his films in a professional manner suggests the need for sound accompaniment of some sort, and music, of course, is the simplest of all these to manage. Besides, music does something substantial in lifting even a mediocre film to a higher plane of screen presentation.

As for the neophyte commercial film producer, music is all important and because his efforts are commercial, there are certain problems confronting him that do not apply to the amateur when music is to be wedded to his films.

The amateur's problem is where to locate the desired music, whereas the man embarking on a commercial film venture is faced with the problem of royalty payments for music used or finding music in the public domain he can use plus the means of playing it for recording on his film at the least possible cost. These problems, then, along with others, are the subject of this article and it is hoped that film makers in both categories will derive some benefit from the information that follows.

From the very beginning of motion pictures it was recognized that music played a most important part in setting the mood of a picture. It helped to build up the drama of situations and enhance emotional effects. Certain sure-fire compositions became associated with particular types of action to the point where they became musical cliches, but the effect on the audience was not to be minimized. "Hearts and Flowers" was certain to jerk more tears for a sad sequence, and the ponderous menace of the "William Tell Overture" was a *must* for storm sequences.

In the years that followed, and especially with the introduction of sound-on-film, music became increasingly important to the motion picture. It became standard procedure to compose full length symphonies as background music to underscore feature films. Today some of the most original American music is composed for the screen by such outstanding composers as Max Steiner, Dimitri Tiomkin, Miklos Rosza, Victor Young, Aaron Copland, and Franz Waxman. Many of their scores have received enthusiastic acclaim in the concert halls.

Just as music has become essential to the feature film, producers of commercial, educational and documentary films have come to realize that well-tailored musical scores can add much to their product,

(Continued on Page 152)

IF YOU plan to edit your initial sound film, a sound reader and a synshroniser will be required. These are pictured left and right above respectively, are both homemade, and were used by Arthur H. Smith in editing his sound-on-film production, "The Mirror."

· GORDON ENTERPRISES ·

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NOUSTON K-1A (SIMILAK TO MODEL 11) 16mm autamatic film processing unit Each step controlled for proper exposura and solution tamperature self-contained unit requiring no extra equipment, processes black and white negativa positive or reversal at speeds up to 20' per minute Like New $3 450 00
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BELL & HOWELL 115 V AC DC Eyemo Motor $125 00
MITCHELL 12-VOLT OC variable speed motor $295 00
MITCNELL 220 V Synchroneus Motor $475 00
WALL A9 Camera Motor, 12 & 24-V D C $275 00

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(MDRE GORDON SPECIALS ON PAGE 154)

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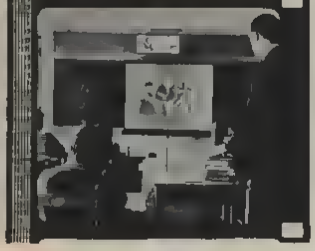

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ACADEMY AWARDS

(Continued from Page 135)

ment were cited for the development of a Multi-Track Magnetic Recording System.

Loren L. Ryder, A.S.C., and the Paramount Studio Sound Department won the third award in this class for the first studio-wide application of magnetic sound recording to motion picture production.

There were no awards in Class 3.

In capturing the Academy 1950 cinematography awards Robert Surtees and Robert Krasker now add their names to a long list of "Oscar" winners for cinematography which began in 1928 when Charles Rosher, A.S.C., and Karl Struss, A.S.C., won the first awards presented by the Academy for photographic achievement in the Academy's initial presentation ceremonies. This was for the photography of *Sunrise* on which Rosher and Struss collaborated. From that date, other "Oscar" winners have been as follows:

1929—Clyde DeVinna, A.S.C., *White Shadows of The South Seas.*

1930—Joseph T. Tucker and Williard Van der Veer, *With Byrd at The South Pole.*

1931—Floyd Crosby, A.S.C., *Tabu.*

1932—Lee Garmes, A.S.C., *Shanghai Express.*

1933—Charles Lang, A.S.C., *Farewell To Arms.*

1934—Victor Milner, A.S.C., *Cleopatra.*

1935—Hal Mohr, A.S.C., *A Midsummer Night's Dream.*

1936—Tony Gaudio, A.S.C., *Anthony Adverse.*

1937—Karl Freund, A.S.C., *The Good Earth.*

1938—Joseph Ruttenberg, A.S.C., *The Great Waltz.*

1939—Gregg Toland, A.S.C., (Black-and-White) *Wuthering Heights.*
Ernest Haller, A.S.C., and Ray Rennahan, A.S.C., (Color) *Gone With The Wind.*

1940—George Barnes, A.S.C., (B&W) *Rebecca.*
Georges Perinal, (Color) *The Thief of Bagdad.*

1941—Arthur Miller, A.S.C., (B&W) *How Green Was My Valley*
Ernest Palmer, A.S.C., and Ray Rennahan, A.S.C., (Color) *Blood and Sand.*

1942—Joseph Ruttenberg, A.S.C., (B&W) *Mrs. Minniver.*
Leon Shamroy, A.S.C., (Color) *The Black Swan.*

1943—Arthur Miller, A.S.C., (B&W) *The Song of Bernadette*
Hal Mohr, A.S.C., and W. Howard Green, A.S.C., (Color) *The Phantom of the Opera.*

1944—Joseph LaShelle, A.S.C., (B&W) *Laura.*
Leon Shamroy, A.S.C., (Color) *Wilson.*

1945—Harry Stradling, A.S.C., (B&W) *The Picture of Dorian Gray.*
Leon Shamroy, A.S.C., (Color) *Leave Her To Heaven.*

1946—Arthur Miller, A.S.C., (B&W) *Anna And The King of Siam.*
Charles Rosher, A.S.C., Leonard Smith, A.S.C., and Arthur Arling, A.S.C., (Color) *The Yearling*

1947—Guy Green, (B&W) *Great Expectations.*
Jack Cardiff, A.S.C., (Color) *Black Narcissus.*

1948—William Daniels, A.S.C., (B&W) *Naked City.*
Joseph Valentine, A.S.C., William Skall, A.S.C., and Winton Hoch, A.S.C., (Color) *Joan of Arc.*

1949—Paul Vogel, A.S.C., (B&W) *Battleground.*
Winton Hoch, A.S.C., (Color) *She Wore A Yellow Ribbon.*

The Awards Presentation of the Academy of Motion Picture Arts and Sciences is an annual affair. Its purpose is to hold up to the artists and technicians of the world's motion picture industry a genuine incentive for achievement and improvement. The gold "Oscars" they receive as a result of their achievements have come to be recognized as the symbol of the world's best attainments in the science and art of motion picture production

TEN BASIC FACTORS

(Continued from Page 139)

While there are undoubtedly solid arguments for preferring 35mm for TV films, 16mm comes much nearer to being standard for that purpose, and of course is considerably cheaper. Also, more than two-thirds of the nation's television broadcasting stations have 16mm projection equipment only. A recent Weed survey disclosed that while 105 operating TV stations presently have 16mm film projection equipment, only 27 have also 35mm machines. Most video engineers agree that 16mm films of maximum quality will give results on television equal to the best quality 35mm films on the present TV band width of 4 megacycles. Very few, if any, engineers sitting before their receivers can guess correctly the width of the film being televised. This, of course, applies to films made expressly for TV—not old motion pictures.

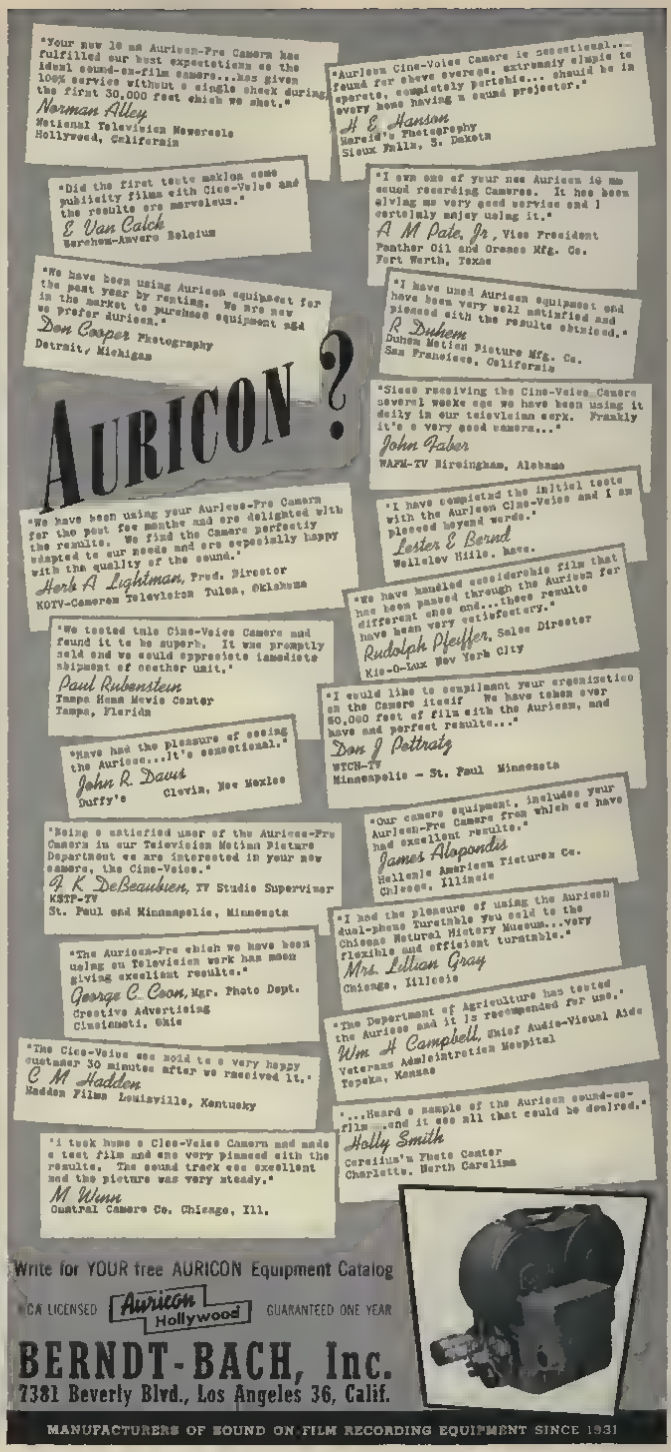
7—*Maximum Detail in Halftones A Must* While it is true in the present stage of development of TV, that extremely fine detail is lost in the lightest and darkest areas of scenes, negatives should be exposed to obtain the maximum of detail wherever possible; otherwise some figures and objects in the scene may appear as silhouettes on the receiver screen.

Television film photography does not require violation of any of the established rules for good photography, including those for composition and exposure, but special handling of the camera *is* necessary in making films for this medium. For instance, shooting into the sun may produce some striking scenes for theatre films, but the result would be poor indeed on TV. Dark scenes, such as those picturing a burglar working in semi-darkness, dramatic though they might be on a theatre screen, would probably appear as a dark blot on the TV receiver.

8—*Contrast Between Main Subject and Background Important* Main objects or important subjects will receive stronger pictorial emphasis and the effect of greater depth will be achieved, if the cameraman will aim for ample contrast between subject and background. The opposite extreme of this desirable quality is the type of picture often seen on television, where the subject appears to merge into the background. To the video viewer, this result is both confusing and hard on the eyes. The desirable difference in tone between objects and background or in areas of the background itself is sometimes referred to as *checkerboard contrast* in which the overall pattern is alternately light and dark areas.

9—*Quick Fades or Lap Dissolves Best for Transitions.* Whenever a fade-out appears on the theatre screen it goes dark rather gradually. But for television fadeouts and fadeins made like those for theatrical films leave the TV screen blank for so long, viewers may think something has gone wrong with their set. For this reason, the modern technique for TV films is to make the fade almost a flash—not more than one-half the accepted length for feature films.

10—*Close Cooperation With Film Laboratory* is highly important in order to obtain prints of your films that are best suited for television. First of all, it is important that only those laboratories experienced in TV film production develop and print your television films. Such labs will know, for example, that the average film for TV should be printed one or two points lighter in density than films made for the theatre There is a tendency in the transmission of TV films to reduce detail in the whole scene if part of it is extremely dark.


"Your new 16 mm Auricon-Pro Camera has fulfilled our best expectations as the ideal sound-on-film camera...has given the first 30,000 feet which we shot."
Norman Alley
National Television Newsreels
Hollywood, California
"Auricon Cine-Voice Camera is sensational... found for above average, extremely simple to operate, completely portable... should be in every home having a sound projector."
H E Hanson
Herald Photography
Sioux Falls, S. Dakota
"Did the first tests making some publicity films with Cine-Voice and the results are marvelous."
E Van Calck
Berchem-Anvers Belgium
"I own one of your new Auricon 16 mm sound recording Cameras. It has been giving me very good service and I certainly enjoy using it."
A M Pate, Jr, Vice President
Panther Oil and Grease Mfg. Co.
Fort Worth, Texas
"We have been using Auricon equipment for the past year by renting. We are now in the market to purchase equipment and we prefer Auricon."
Don Cooper Photography
Detroit, Michigan
"I have used Auricon equipment and have been very well satisfied and pleased with the results obtained."
R Duhem
Duhem Motion Picture Mfg. Co.
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AURICON ?
"Since receiving the Cine-Voice Camera several weeks ago we have been using it daily in our television work. Frankly it's a very good camera..."
John Faber
WAFM-TV Birmingham, Alabama
"We have been using your Auricon-Pro Camera for the past few months and are delighted with the results. We find the Camera perfectly adapted to our needs and are especially happy with the quality of the sound."
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KOTV-Cameron Television Tulsa, Oklahoma
"I have completed the initial tests with the Auricon Cine-Voice and I am pleased beyond words."
Lester E Bernd
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"We have handled considerable film that has been passed through the Auricon for different ones and...these results have been very satisfactory."
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"I would like to compliment your organization on the Camera itself We have taken over 50,000 feet of film with the Auricon, and have had perfect results..."
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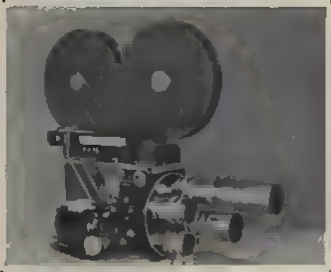

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The preceding ten points are intended merely as a guide to the important steps in the production of television films. It is not intended that they should be the "directions on the label" which, once read, magically prepare the reader for the exacting job of making a film for television More thorough instruction and guidance may be had by reading the many informative books which have only recently been published on the subject of television Among these, in addition to Battison's *Movies For TV*, referred to above, are *Television Programming and Production*, by Richard Hubbell, (Rinehart & Co., Inc.), and *Here Is Television*, by Thomas H. *Hutchinson*. (Hastings House). All contain much data of importance to both the cinematographer and the producer of television films

AERIAL PHOTOGRAPHY

(*Continued from Page 136*)

and at first a little puzzling. Later, I learned that during World War II his guns had spelled finis for 23 German planes After all, there isn't much difference in the knowledge and tactics required to keep the other fellow in your sights, whether you're using a gun or a camera.

The camera ship was a T33, the trainer version of the F80 jet fighter modified to provide two seats but retaining every characteristic of the latter. The mounting of the camera in this plane presented several problems: space is decidedly limited and the problem of mounting the camera to cope with all the mechanical requirements and still remain operable was considerable. Stanley Horsley A.S.C., head of the studio's photographic effects department, and Bill Clothier did considerable pioneering work on the problem

The mount, installed in the rear compartment, consisted of a heavy dural bar securely bolted to the frame of the ship To this was fitted a sliding mount providing a quick shift of the camera from one side of the ship to the other. This arrangement served quite well for most of the scenes but the mounting used when making straight ahead shots was somewhat more involved Here the space available is even more restricted. In addition there was the problem of having to shoot through the three-inch bullet-proof glass which forms the front part of the canopy. We found it necessary to suspend the camera in an inverted position in order to bring the lens sufficiently near the canopy glass In addition, it was necessary to allow about 40% increase in exposure to compensate for the light absorption of the glass.

The principal handicap in all of the aerial photography, however, was what technical men call the "G forces"—the sharp increase in the effect of gravity which occurs when doing maneuvers at high speeds. This added stress often amounts to seven or eight times the normal pull of gravity. Thus a person normally weighing 180 pounds becomes the equivalent of 1,260 pounds in a fast dive in a jet plane. The camera normally weighing about 60 pounds must be securely mounted to withstand a pull of some 420 pounds. Operating and adjusting the camera under the same conditions also becomes a problem; raising one's arm requires tremendous effort.

I wore the usual flyer's gear including a sturdy crash helmet to protect my head when sharp gyrations of the ship tossed me about. Another important item was the oxygen mask. Much of our flying was done at altitudes of from ten to thirty thousand feet.

As usual, when tough assignments come along, the stutdy and old reliable Bell & Howell standard 35mm camera was also chosen for this assignment. Here the very latest in modern engineering, exemplified by the Lockheed jet aircraft and the Bell & Howell camera, engineered and put into production 37 years ago, formed a perfect team Mechanically, each did its part without a hitch.

The aerial production shots and process plates required careful preparation and skillful planning in order to preclude occurrence of accidents. It is a credit to all concerned that we put in some 100 hours of flying jet aircraft without a single serious mishap

The action highlights of the picture occur in the sequences depicting the Acrojets displaying a combination of flying skill and equipment, which is sensational, to say the least. Acrojets are acrobatic jet planes, or more properly, jet planes flown in acrobatic maneuvers by crack Air Forces' flyers. Four of the F80 jets are flown in close formation through an intricate set of maneuvers. In some instances scarcely 18 inches separate wing tips from those of adjoining planes. Such maneuvers are not conducted to show off flyers' skills, but are a specialized form of training in precision flying to teach perfect coordination and team work.

The Acrojet team at the Williams Base performed for a sequence in *Air Cadet*. All the pilots are top flyers.

Leader of the group is Capt. Michael Smolen. He acted as technical advisor on the production.

Not all of the photography of the jet planes was done from the T33 camera ship. We also used a B45 bomber. This is a four-jet giant which is even faster than the F80 fighter. The side door of this ship was removed and a regular freehead mounted on the floor near the open door. The air blast was partially alleviated by the spoiler flaps just forward of the opening. These are normally used only in case of bail-out. Due to the additional hazard presented by the open door, a safety harness was devised which held me securely within the ship. It was quickly detachable in case there was sudden need for ditching the plane.

Weather conditions were an important factor in filming the jets in action. We discovered early that in shooting these fast planes against clear blue sky, there was not sufficient contrast between the two to make the planes sufficiently distinguishable on the screen. What we needed for most satisfactory results was a "buttermilk sky"—a mottled cloud formation.

To point up the terrific speed of the jets, it was necessary to have high clouds in the sky for pictorial contrast. Even though each second of flight takes a jet through 80 feet of space—top speed is approximately 500 miles per hour—this is not evident when the plane is seen against clear skies.

Clear days with empty, blue skies prevailed at the Williams location, so after we completed all scenes which had to show the terrain adjacent to Williams, we checked national weather reports in order to locate weather conditions in which the right cloud formations prevailed. Such, we were informed, could be found in Florida. So we left immediately for Tyndall Field, near Panama City, Florida. The six jets made the trip in exactly three hours and 30 minutes flying time, which is covering a lot of country rather fast.

To accent the speed of the planes, we altered the camera speed in many instances. Depending on angles, the distances between the ships and the clouds and the relative speed of the camera ship had to be taken into consideration, with the result that camera speed often varied from 8 to 48 frames per second.

Clouds are elusive things, even in Florida, and we often found ourselves chasing them all over the state. Once on a trip in search of clouds, we were looking down at a great expanse of water which I took to be the Gulf of Mexico. Our pilot, Major Carr, informed me that we were looking down into the Atlantic Ocean—an example of how

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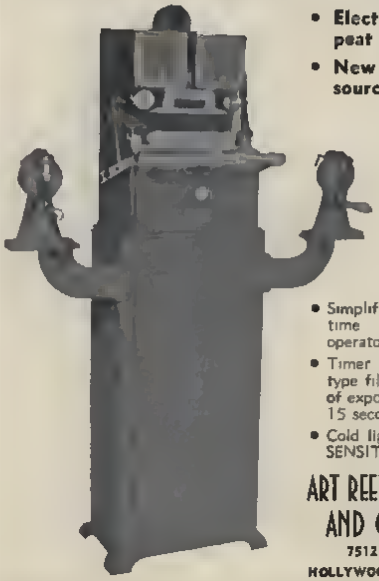

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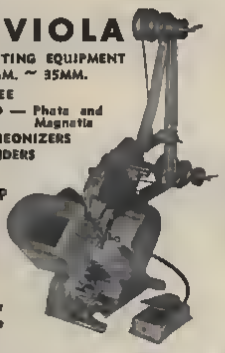

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far one can travel in a short space of time in a jet plane.

A considerable measure of credit for our success in this aerial photography assignment is due the USAF personnel who assisted us or participated in the production. In addition to Lt. Bryant, Capt. Smolen and Major Carr, already mentioned, there were Capt. Harry Chapman, Capt Eldon Klapal, and Captains Dale Goodermote and William Brockmire—pilots of the Acrojets.

Cliff Stine, A.S.C., of course directed the photography on the major part of the picture—a masterful job, particularly in his handling of the many effectively natural but difficult interiors photographed on location His camera work gives the production a pleasing semi-documentary flavor.

One of the pilots at Williams said that he'd rather fly a jet than kiss his best girl—more kick to it! Be that as it may, certainly the kick is there. Jet flying leaves memories entirely pleasant and unforgetable, but photographing jets, especially from a jet, is a provocative assignment for any cameraman.

MUSIC FOR FILMS

(*Continued from Page 146*)

also. Aside from setting mood and building up dramatic effect, music does much to give such films a professional finish. By means of proper musical transitions, a smoother flow is created from sequence to sequence and jumps in continuity, which would be very glaring without background sound, become considerably softened.

Music does much to build a sequence, setting the mood oftentimes before the visual picture conveys any unified idea. Gradually building in such a sequence, it carries the emotional response of the audience onward and upward until the climactic scene is reached. Similarly, a change from one mood to another may be effected by fading from one type of music to another as the visual transition between sequences is made on the screen. These principles apply not only to the dramatic feature, but to the documentary, commercial and educational film as well. There is drama in industry and commerce, and these elements can be especially pointed up in films on these subjects through the proper use of background music.

The type and quality of music used in a film depends mainly upon the available budget. For the advanced amateur, semi-professional or small-scale industrial film producer, the budget factor assumes real importance and it is necessary to decide first how much money is available for music before methods can be decided upon.

Let us deal first with the professional film maker undertaking his first commercial production, and assume that there is unlimited, or at least substantial budget available for the finest type of musical scoring. The ideal way to add music to his picture is to have an original score composed and played to exactly complement the action of the film Being the best method, it is also the costliest—but it is often possible to cut costs by intelligent planning.

For an original music score, it is important to select a composer with visual imagination, one who can work within the more or less restricted confines of film footages. Composers who have done no previous work for motion pictures may find this very confining at first, but most of them are able to adapt to the medium if they formulate a proper working method Much of the actual creative work can be done before the film is finally edited. By studying the script, the rushes, and the rough-cut workprint of photographed sequences, the composer can absorb the mood and atmosphere of the subject. He can develop his motifs and themes accordingly, formulating musical ideas and phraseology that can be timed precisely to scenes and sequences when the final cut is approved.

Using a workprint of the finished footage, the composer makes a chart showing in footages (as well as in minutes and seconds) the length of scenes and sequences that need orchestration as separate dramatic units. He also notes where climaxes of action occur that are to be pointed up with appropriate musical punctuation. Working on the film sequence by sequence he uses a Moviola or small projector on which to run the film so that he can check his music against the subject matter as he goes.

The professional method of recording an original score is to have the orchestra set up on a stage equipped with screen and glassed-off projection facilities. The score is recorded in segments up to a full reel, with the screen placed at the rear of the orchestra so that the conductor can watch the action and time the music to it accurately. This enables him to hit all of the musical transitions and climaxes at the precise moments

If the budget will allow an original score, but not a full orchestra, it is often possible to use a small but effective combination of instruments or a single instrument such as the piano or Hammond organ. The latter instrument is very versatile and is capable of many imaginative sound effects when played skillfully. In most cases standard union recording rates will prevail, and in the case of a single instrument the musician is paid

according to leader's scale, which is twice the amount paid to a single musician playing in a combination or orchestra.

Where the budget will not allow an original score, the next best thing is a specially cut recording track. Emil Velazco, Inc., in New York City is one of several organizations which provides original music for non-theatrical as well as professional film makers. Working from a library of music recorded on film, one of the organization's music cutters will study the producer's workprint, select appropriate themes, and cut the music to exactly fit individual scenes and sequences, all for a surprising nominal fee.

Most sound-on-film recording studios have available libraries of original music, such as that put out by the English firm of Boosey & Hawkes. This is available for re-recording as film background music. The cost is a small royalty per selection. This library is quite extensive and is constantly being enlarged. Moreover, since it consists only of original music, there is no danger of using themes that will sound too familiar.

The best, though more expensive, way of using this disc recorded library music in order to get the precisely cued track is to re-record the music on film or tape and use the individual themes to cut a score tailored exactly to the work print. This cutting should be done by an experienced music cutter with a knowledge of film construction as well as music technology. He will know how to punctuate a sequence properly, how to cut several musical segments together smoothly, how to point up dramatic climaxes, etc. In this type of scoring, a positive print from the negative original is used in re-recording. Thus the producer can build a library of music negative which he can use in future films.

The least expensive way of scoring a picture and the one most frequently used by advanced amateurs is to re-record narration directly against disc music piped in to the recorder, using what is known as the "radio method." This has the advantage of lower cost in a sense, because one need not pay the extra material, lab and recording fees of first recording the music from disc onto film. However, it is not as precise as the other method, takes longer to rehearse, and is more subject to "fluffs" which can prove expensive, since studio re-recording or "dubbing" is usually done on an hourly basis.

In recording an original score according to the method suggested earlier, each segment or reel is cued visually so that the conductor will know exactly when to begin. The best way to do this is to punch the white leader three times in the picture

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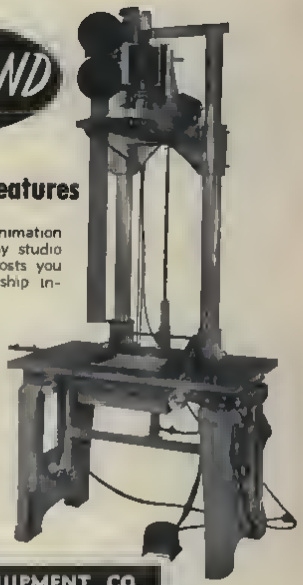

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areas and at about 1-foot intervals just prior to the start of the picture itself A grease pencil mark extending from the last punch mark down to the first frame of the picture will help further to warn the conductor, as he watches the film on the screen, so that he can give his downbeat on the precise instant that the first frame of the picture appears

In the case of a specially cut score composed of individual recordings dubbed off of disc onto film, it is important that the track be carefully edited to coincide with the picture. It is wise to set up the track in "A" and "B" rolls so that dissolves or *segues* can be made smoothly from one piece of music to the other Using a synchronizing machine, the first piece of music (which usually begins with a fanfare or dominant chord) is lined up with the first frame of the titles on the work print Both footages are then carried on down to the point where the next music cut or dissolve is indicated

Where a straight cut is indicated, it is ideal for the second piece of music to begin on an approximate level and key that is similar to that on which the first piece of music ended. This insures a smoother continuity between the two pieces of music.

In the case of a dissolve, especially if there is a considerable change of tempo or mood, it is better if the actual changeover is "hidden" under dialogue or narration. In the case of a piece of music that is too long for the sequence which it accompanies, and yet it is desired that the natural ending of the music coincide with the end of the sequence, it is possible to work from both ends of the sequence, cinching up the excess music either at a point where a natural cut can be made or by dissolve hidden under voice. A similar technique is followed in matching a musical climax with a climax of action. These two points should be paired up, with the rest of the music being cinched up as above.

Music that builds to a climax is extremely effective when matched with action that also builds to a climax—but this type of music should never be used where the action does not follow suit, because the audience will be carried along with the music only to feel cheated when the promised action climax does not materialize This principle also follows when "menace" or suspense music is used in sequences where the action does not warrant its use.

Now if you are new at this business of adding music to your films—by means of a sound track, that is—there are certain vital things you must remember. If you produce the film for profit, if you are going to sell copies of the film, then be sure your music is first "cleared," both for copyright and Petrillo. Do not dub music from commercially issued American recordings (phonograph records) for background music or otherwise If you do, you are liable to suit.

As a rule the amateur, whose films will not be used in any commercial manner, may employ music dubbed from records without fear of legal action This is being done regularly Such films may be exhibited in contests and at cine clubs without liability, just as long as no rental or admission fees are derived from such showings. Where the film maker has any doubts, he usually can secure permission to use music from commercial records in amateur film showings, by writing the record manufacturer who usually holds the copyright

For the amateur who records his music and sound on tape, all of the procedures described above may also be applied in recording and editing music on tape He becomes the orchestra leader and it is he especially who will benefit by the cue marks on the film. These will aid him in starting and stopping or fading his records in recording the complete musical score, netting a very professional result when both tape and picture are synchronized.

VITAL TOOL OF LABS

(*Continued from Page 140*)

The vibration motor consists essentially of a coil placed in a uniform magnetic field. The coil is fastened rigidly, by means of a spider, to a drive rod which can be attached to the mechanical device or apparatus to be tested When alternating current is passed through this drive coil, the coil will oscillate in the magnetic field and develop a force which is applied to the drive rod.

The spring suspension is such that the maximum amplitude of vibration is $\frac{3}{16}$ of an inch from the position of the coil at rest. Power per operation of the equipment is obtained from a 115-volt, 60-cycle operating current supply, and from a 220-volt direct current supply.

Besides intricate electrical equipment, this testing method may also be applied in testing the durability of welded or riveted light sheet metals, such as used in aircraft.

Ultra high-speed photography of such tests enable engineers to observe the progressive deterioration of materials and equipment on the screen with the motion greatly decellerated, thus aiding them in designing more rugged equipment.

The Fastax sigh speed camera used by Westinghouse was developed during World War II. Its greatest contribution was in making photographic records of atom bomb tests; in recording short dura-

tion phenomena such as the explosive effect of ammunition, jet propulsion and the jamming action of machine guns.

The first Fastax camera to be designed employed 16mm film and exposed it at 4,000 pictures per second. A later model used 8mm film and operated up to twice the speed—8,000 pictures per second. When a wider angle of picture was desired for ballistics study a third Fastax camera was designed using 35mm film and recording pictures on half a frame. This camera records pictures at speeds of 3,500 per second. A rotating prism replaces the conventional rotary focal plane shutter and an exposure slit is provided before and behind the prism. Light rays picked up by the lens pass through the prism and are focused on the surface of the film as it passes over the central driving sprocket. Speed of the camera is governed by varying the voltage applied to the motor.

Both black-and-white and color film may be used successfully for high speed photography. Polarized light also has been used in conjunction with the camera to study the stress and impact conditions in transparent materials.

THE AQUAFLEX

(Continued from Page 133)

and have it under water again, ready to shoot.

Still another important feature, and an exclusive one, is its reflex finder which enables the operator to observe the action through the taking lens as it is being filmed. This eliminates all problems of parallax, which is highly important, in view of the tremendous difference in the refraction index under water.

The Aquaflex is essentially an Eclair Camerette with a revamped film magazine that has the film rolls in tandem order, instead of one above the other, and is contained in a two-piece underwater housing. Dial knobs located at either side near the hand grips, permit changing lens focus and diaphragm settings under water, also to change the camera motor speed. A conveniently located switch permits starting and stopping the camera motor with the same ease as with cameras used above surface. The motor speed control is an important feature which makes it possible to maintain consistent camera speed regardless of the water temperature or when voltage starts to decline. Low temperature of sea water at great depths has a tendency to affect the battery, reducing its voltage output. In such instances it becomes necessary to increase the camera motor speed, as indicated by the camera's tachometer, which is always visible through a small

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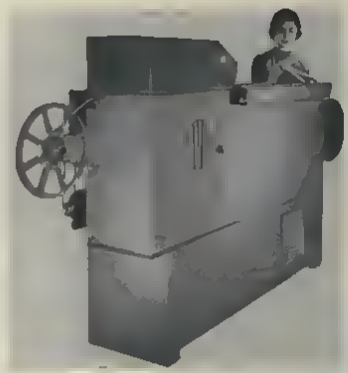

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glass-covered porthole. The camera is driven by a 6-8 volt 7 amp motor powered by a compact, non-spillable wet battery. The camera shutter is variable and may be set at any desired opening from 200° to 40°, thus affording an exposure choice from 1/14 second at 8 fps, to 1/415 second at 40 fps.

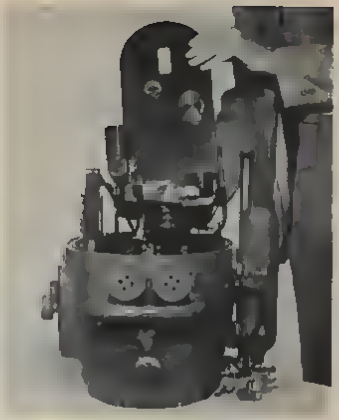
The external Aquaflex housing is in two sections. The front section contains the plastic photographing port, the control gears and camera mount, the batteries and wiring, the pressure gauges and exposure meter, plus all the mechanisms for controlling the camera under water.

The rear section covers the 400-foot film magazine, contains the three smaller viewing ports, and the water-tight sealing device. On the outside is mounted one of the three compressed air cylinders supplied with the camera. This is connected to the interior pressure control mechanism. The compressed air valve is so regulated that the camera housing under water contains about 3 psi over the sea pressure at any depth the camera may be used. As the camera is descending, the demand valve increases the interior pressure to equal the depth pressure, plus 3 psi. When the camera is raised to the surface, the demand valve automatically closes and excess air pressure escapes through the relief valve.[1] In short, the Aquaflex automatic pressurization system works the same as in the Aqualung diving unit.

In the camera housing are located small lights to illuminate the built-in exposure meter, film speed tachometer, internal-external pressure differential gauge, and the film footage indicator. These lights go off automatically when the camera starter switch is turned on, thus enabling the motor to receive the maximum of battery current.

Although the built-in exposure meter is an ideal feature of the Aquaflex, I found that with a little experience it was possible to figure exposures under water much the same as when above surface. In the Virgin Islands area, working in 25 feet of water, the exposure norm ran consistently one-half stop more than would be normal above surface. Also, water presents a magnification problem of about 27%. Thus, if I used a 28mm lens on the camera, I would get results comparable to that when a 40mm lens is normally used above surface. The Aquaflex, incidentally, is normally supplied with 28mm, 40mm, and 75mm coated f/2 Kinoptic lenses.

Now, with the recent introduction of the combination 16/35mm Eclair Camerette, it is possible also to obtain the Aquaflex in the combination model to take either 16mm or 35mm film interchangeably. The use of 16mm film, which affords a greater film load on a per frame ratio basis, permits a maximum underwater shooting interval of 11 minutes.



MOUNTING the Aquaflex camera in its two-piece housing. Gear rings on lenses merge with gears of external controls

Although we were working in tropical waters where barracuda, eels, octupus and sharks abound, none of these bothered either me or the frogmen who were our underseas actors. Several times a barracuda would approach, but kept a safe distance, appearing merely curious.

The frogmen, of course, all wore protective rubber suits along with Swimfins, face masks and compressed air tanks with the breather unit. These men, looking not unlike giant frogs in the water, are the specialists trained by the Navy for underwater demolition tactics and other unique wartime maneuvers, some of which are depicted in 20th Century-Fox's production, *The Frogmen*, soon to be seen on the nation's theatre screens.

[1] R. R. Conger, Journal of the SMPTE, December, 1950

EDITING MAGNETIC SOUND

(*Continued from Page 137*)

NOTE: Experience to date indicates that production magnetic film can be used ten or more times and the edited film can be used at least twice. The preceding write-offs of magnetic film are on this basis.

By using and editing magnetic film the producer can save $565.00 and at the same time gain the best possible sound quality. If the above picture were to be recorded with the old 16mm negative-positive process, the cost would be

$201 00 and if the Ryder magnetic method were used with 16mm magnetic film the cost would be $79.00; a saving of $122 00

If the original recording is made with Fairchild synchronous ¼" tape and the 17½mm magnetic film for editing is obtained by transferring, the cost would be $109.00 in place of $121 00. If the original recording is made with the Fairchild synchronous ¼" tape and 16mm magnetic film for editing is obtained by transfer, the cost would be $74.00 in place of $79.00.

All of the above has been in regard to a twenty-eight minute television show. In the case of a feaure-length 35mm production using 100,000 feet of sound recording, 60,000 feet of print takes and having a release length of 10,000 feet, the old negative-positive cost would be $5,683.00 Using the Ryder 17½mm magnetic film method the cost would be $1,261.00 and the cost using Fairchild synchronous ¼" tape for production would be $1,200.00 Many combinations of procedures can be used and in certain cases alternative procedures are recommended A complete study of all possible cost combinations has been prepared and specific answers to any cost question will be furnished upon written request to the writer

Loren Ryder and the Paramount Studio Sound Department were awarded an "Oscar," at the Academy's 1950 Awards ceremonies, for technical achievement in the first studio-wide application of magnetic sound recording to motion picture production.

It should be pointed out that some television producers are changing from 16mm to 35mm film because of complaints received about 16mm sound quality, 16mm sound quality can be completely satisfactory and any producer that is changing to 35mm film for this reason will be spending hundreds of dollars that could be saved by a proper use and handling of 16mm.

Magnetic readers and magnetic reproduction heads are available for modification of Moviolas. Some review rooms have been equipped for reproducing magnetic film, projection review room rental service is available and more review rooms will be equipped at an early date. At present most magnetic film is hand spliced, which is slow. Splicing service is available and low-priced mechanical splicing equipment will soon be on the market The assembly of print takes and certain other splices can be made by any

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of the standard photographic splicing methods.

The pictures accompanying this article show a modulation writer in service. The sound from the magnetic film is picked up by a magnetic reproducer, thence amplified, and made to drive a special reproducer which mechanically moves a ball point pen in accordance with the original modulation. The pen writes on the oxide side of the film. The first writing is down the center of the film, the second and subsequent writings are displaced from the center line.

The position of the magnetic recording on all Paramount and Ryder 35mm magnetic recording is in the so-called negative position with the center line of the recording halfway between the center line of the film and the inside of the sprocket holes. The magnetic recording on 17½mm magnetic film is in the same position as for 35mm magnetic film and can play interchangeably on many equipments. The center line of 16mm magnetic recording is in the center of the film with respect to the two edges. This applies to both single and double perforated film. The width of the recording is in excess of 100 mils.

The writer recommends strongly against off-speed recordings, as alternative standard speed methods can effect an equal saving and at the same time avoid the confusion which is already resulting from off-speed recordings.

The first attempt at magnetic cutting will seem awkward, largely because it is different. It should be expected that some of the steps will be new and some of the steps slightly more complex than photographic film. However, with experience, magnetic editing should be found to be faster, and in the over-all simpler and much less expensive than previous procedures.

USE OF REFLECTED LIGHT

(Continued from Page 145)

the photographer acquires or makes a number of durable reflectors, compact in size and easily carried along with camera and tripod.

Professional reflectors, such as used in the Hollywood studios, vary both in size and in reflective material. Many of the studios have a range of reflectors, each with surfaces of different reflective intensities. Still others have made up dual reflectors having both surfaces coated—one bright, the other soft. The brighter the surface, the stronger and harsher the reflected light. These are employed where the light must be reflected a considerable distance. Reflectors of this type are covered with silver or aluminum leaf, sheet aluminum foil, or sheet metal. The aluminum leaf is best because the small squares break up the reflected beam of light and do not throw a concentrated hot beam as does sheet metal. Where sheet foil is used, it is crumpled slightly as it is applied to the reflector surface, the result being that the reflected light is broken up into a myriad of beams instead of a single "hot" beam.

For a softer reflected light, aluminum or chrome paint is applied to the reflector surface. Reflectors of this type can be used fairly close to a subject to throw fill light into the shadow side of the face or scene. Where light of still lesser intensity is desired, then a reflector surfaced with flat white paint is the most satisfactory.

Because more than one reflector is usually required in augmenting lighting for the average outdoor scene, it is advisable to design your reflectors for portability and space saving. You'll want to be able to pack them into the trunk compartment of your car, along with the rest of your equipment, so let's plan them from that point of view.

First a very simple reflector, but highly efficient nonetheless, can be made from an ordinary window blind, say 30 to 36 inches in width and shortened in length to about 36 inches. Paint one surface—the inside surface—with aluminum or chrome paint. This reflector may be unrolled when needed and hand-held to throw sunlight into a scene or a group of subjects to produce a more natural pictorial result.

Because the average cine amateur usually works alone without camera assistants, the ideal reflectors are those which are rigid and can be propped up. Once set at the proper angle, you can devote all your attention to your camera and subjects, shifting the reflector angles only when position of the sun has changed sufficiently to require it.

One such reflector can be made by taking two panels of heavy cardboard, wallboard or quarter-inch plywood 15 by 30 inches in size and hinging them together. The cardboard and wallboard panels may be hinged with bookbinder's cloth tape, which is gummed on one side and is easily applied. Small hinges should be used on the wooden plywood panels. Thus a "book" is formed, when opened becomes a flat panel 30 by 30 inches square—a fair sized reflector surface. Coat the inside surfaces of this folding, book-type reflector, using any of the materials previously mentioned. Choice, of course, will depend upon the intensity of the light you will need. You will find it advisable to make at least three reflectors—two with hard reflector surfaces, and one with a soft surface.

A means should be provided for holding the reflectors opened flat, and at an angle Two lengths of 1" square wooden material will suffice for this: one piece to be temporary nailed or tacked across the back of reflector, while it is open, and the other to act as a prop to hold the reflector at the desired upright angle.

If your cinematorgraphy is to be fairly extensive, then a more rugged type of construction should be followed. In this instance, the quarter-inch plywood material should be used The panels should be applied over frames made of ¾ by 1½" material securely nailed and braced A wooden prop can be attached to each reflector by means of a small hinge so that it is always in readiness for use Small drawer handles can be attached to the two open edges of the reflector to facilitate carrying when folded.

The most common error resulting from use of reflectors by beginners is "washing out" natural shading The neophyte, irritated by seemingly overcontrasty tones in his subject, often cancels out tonal effects in an effort to get away from the uncorrected condition. But this practice should be avoided unless the footage is being shot especially to match that previously made on an overcast day Some cinematorgraphers hold that completely flat lighting has no character and this seems to be the best way of denoting its lackluster quality. Light from reflectors should bet concentrated on subjects out of doors only to obtain a pleasing balance.

Balance the lighting by eye or with the aid of an exposure meter. Either method has arguments in its favor You can make a choice after trying both and studying results on the screen. Matching by eye assures that resultant tones harmonize with the rest of the scene. The background and nearer areas are automatically taken into consideration when the cameraman views his scene from camera position. For example: a medium shot in a mountain setting may contain a jagged rock formation in the background that has deep shadow patterns. If someone standing before it were illuminated with a very strong reflected light coming not from the angle of the sun, the result might appear quite unnatural. The subject would be lit out of key with the natural illumination of the surroundings The problem would be to lighten up the overall scene, if possible, with very soft reflected light being used on the shadow side of the subject.

The reasons for using a light meter in lining up reflectors are formidable. Many cinematographers work for a controlled quality from one shot to the next, and ratios that are checked with a meter are sure to remain constant. A picture

(*Continued on Page 161*)

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Allied Artists

• HARRY C NEUMANN, "The Highway man," with Charles Coburn, Wanda Hendrix, Phillip Friend, Victor Jory and Virginia Huston. Leslie Selander, director

Columbia

• HENRY FREULICH, "Son Of Dr Jekyll, with Louis Hayward, Alexander Knox, Jody Lawrence, Lester Matthews Seymour Friedman, director

• WILLIAM SNYDER, "Ten Tall Men," (Harlburt Prod) with Burt Lancaster, Jody Lawrence, Gilbert Roland, Mike Mazurki Wilks Goldbeck, director

Independent

• ELWOOD BREDELL, "Skid Row," (Jos Bernhard Prod) with Sterling Hayden, Viveca Lindfors Thomas Mitchell, Ludwig Donath Stuart Heisler, director

• HAL MOHR, "Chuck A-Luck," (Fidelity Pictures) with Marlene Dietrich, Arthur Kennedy, and Mel Ferrer, Fritz Lang, director

Lippert

• ERNEST MILLER Little Big Horn," with John Ireland, Lloyd Bridges, Marie Windsor, Reed Hadley, Jim Davis Charles M Warren, director

• JACK GREENHALGH, "Savage Drums," with Sabu, Lita Baron, Sid Melton, and Margia Dean. William Berke, director

• JACK GREENHALGH, 'Yes, Mr Bones," with Flournoy Miller, Slim Williams and Emmett Miller Ron Ormond, director

• JACK GREENHALGH, 'That's Show Business," with Jimmy and Mildred Mulcay, The Diacoffs, Paul Gordon and Jean Carroll Ron Ormond, director

• JACK GREENHALGH, "G I Jane," with Jean Porter Tom Neal and Iris Adrian Reginald LeBorg, director

M-G-M

• RAY JUNE "Strictly Dishonorable," with Ezio Pinza, Janet Leigh, Millard Mitchell, Gale Robbins Norman Panama and Melvin Frank, directors

• ROBERT PLANCK, 'Texas Carnival," (Technicolor) with Esther Williams, Red Skelton, Howard Keel, Ann Miller Keenan Wynn Charles Walters, director

• ROBERT SURTEES, "The North Country," (Ansco Color) with Stewart Granger and Wendell Corey Andrew Marton, director

• JOHN ALTON, "People Against O'Hara," with Spencer Tracy, Pat O'Brien, John Hodiak, Diana Lynn, Dick Anderson John Sturges, director

• GEORGE FOLSEY, 'Rain, Rain Go Away," with James Whitmore, Nancy Davis, Jean Hagen and Ralph Meeker Fred M Wilcox, director

• HAROLD LIPSTEIN, "Banner Line," with Sally Forrest, Keefe Brassele, Lionel Barrymore, Lewis Stone, J Carrol Naish, Spring Byington Don Weiss, director

• PAUL C VOGEL, "The Angels and The Pirates," with Paul Douglas, Janet Leigh, Keenan Wynn, Donna Corcoran, The Pittsburgh Pirates. Clarence Brown, director

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Monogram

• WILLIAM SICKNER, Casa Manana," (L. Parsons Prod) with Robert Clarke, Virginia Welles, Carol Brewster, Spade Cooley Jean Yarbrough, director.

• WILLIAM SICKNER, "Father Takes The Air," with Raymond Walburn, Gary Gray, M'liss McClure, Barbara Brown and George Nokes Frank McDonald, director

Paramount

• VICTOR MILNER, "My Favorite Spy," with Bob Hope, Hedy Lamarr, Francis L Sullivan, Arnold Moss, Marc Lawrence and Iris Adrian Norman Z McLeod, director

• GEORGE BARNES and PEVERELL MARLEY, "The Greatest Show On Earth," (Technicolor) with Betty Hutton, James Stewart, Cornel Wilde, Dorothy Lamour, Gloria Grahame, Charlton Heston and Lyle Bettger Cecil B. DeMille, director

• DANIEL FAPP, "The Stooge," with Dean Martin, Jerry Lewis and Eddie Mayehoff Norman Taurog, director

• LEE GARMES, "Detective Story," with Kirk Douglas, Eleanor Parker, William Bendix Cathy O'Donnell, Horace McMahon Wilham Wyler, director

• LIONEL LINDON "Rhubarb," (Pearlberg-Seaton Prod) with Ray Milland, Jan Sterling, Gene Lockhart, Orangey Murray Arthur Lubin, director.

• CHARLES LANG, "Peking Express," (Hal Wallis Prod) with Joseph Cotton, Corrine Calvert, Edmund Gwenn Dick McWhorter, director

• HARRY STRADLING, "My Son John," with Helen Hayes, Van Heflin, Robert Walker, and Dean Jagger Leo McCarey, director

R.K.O.

• FRANK PLANER, 'Androcles And The Lion," with Jean Simmons Robert Newton, George Sanders, James Donald. H C Potter, director

• WILLIAM V. SKALL, "Half-Breed," (Technicolor) with Robert Young, Janis Carter, Jack Buetel, Barton MacLane Edward Ludwig, director

• JAMES WONG HOWE, Behave Yourself!" (Wald-Krasna Prod) with Farley Granger, Shelly Winters, Francis L Sullivan, William Demarest, Hans Conried, Sheldon Leonard Margalo Gilmore George Beck, director

• FRANK PLANER, "The Blue Veil," (Wald-Krasna Prod) with Jane Wyman, Charles Laughton and Katharine Locke Curtis Bernhardt, director

Republic

• ELLIS W CARTER, "Havana Rose with Estelita Rodriquez, Hugh Herbert, Bill Williams, Florence Bates William Beaudine, director

• WALTER STRENGE "Secrets Of Monte Carlo," with Warren Douglas, Lois Hall June Vincent, Steven Bekassy George Blair director

• KARL STRUSS, "Lady Possessed," (Portland Prod) with James Mason, June Havoc, Pamela Kellino, Steve Dunne William Spier and Roy Kellino, directors

• WALTER STRENGE, "Rodeo King and The Senorita," with Rex Allen, Mary Ellen Kay, and Buddy Ebsen Phil Ford, director

20th Century Fox

• CHARLES G CLARKE, "Kangaroo" (Technicolor) (Shooting In Australia), with Maureen O'Hara, Peter Lawford, Finlay Currie and Richard Boone Lewis Milestone, director

• NORBERT BRODINE, "The Frog Men," with Richard Widmark, Dana Andrews, Gary Merrill, Jeffrey Hunter, Robert Wagner and Warren Stevens Lloyd Bacon, director

• LEO TOVER, "The Secret Of Convict Lake," with Glenn Ford, Gene Tierney, Zachary Scott, Ethel Barrymore, Ann Dvorak, Helen Westcott and Barbara Bates Michael Gordon, director

• LEON SHAMROY, "Friendly Island," (Technicolor) with William Lundigan, Jane Greer, Gloria DeHaven, Mitzi Gaynor, David Wayne, Jack Paar and Gene Lockhart Edmund Goulding, director

• HARRY JACKSON, "Anne Of The Indies," (Technicolor) with Louis Jordan, Jean Peters, Deborah Kerr, Herbert Marshall, Thomas Gomez Jacques Tournear, director

• JOSEPH LASHELLE, 'Mr Belvedere Blows His Whistle,' with Clifton Webb, Joanne Dru, Hugh Marlo and Zero Mostel. Henry Koster, director

• MILTON KRASNER, 'The Dr. Praetorius Story," with Cary Grant and Jeanne Crain Joseph Mankiewicz, director.

Universal-International

• RUSSELL METTY, "Fiddler's Green," with Shelly Winters, Richard Conte, Stephen McNally Charles Bickford and Alex Nicol George Sherman, director

• MAURY GERTSMAN, "One Never Knows," with Dick Powell Peggy Dow, Joyce Holden, Charles Drake William Vedder Lou Breslow, director.

• IRVING GLASSBERG, "The Cave,' (Technicolor) with McDonald Carey Alexis Smith, Victor Jory, and Hugh O'Brian William Castle, director

• CHARLES BOYLE, "Fine Day," (Technicolor) with Howard Duff, Mona Freeman, Josephine Hull Craig Stevens Joseph Pevney, director

Warner Brothers

• ROBERT BURKS, "Tomorrow Is Another Day," with Ruth Roman, Steve Cochran, Lurene Tuttle and Wallace Ford. Felix Feist, director

• ERNEST HALLER, "Moonlight Bay," (Technicolor) with Doris Day, Gordon MacRae, Jack Smith, Mary Wickes, Rosemary de Camp, Leon Ames.

• EDWARD DUPAR, "I Was A Communist For The F.B.I.," with Frank Lovejoy, Dorothy Hart, James Millican and Konstantin Shayne Gordan Douglas, director

• WILFRED CLINE, "Painting The Clouds With Sunshine," with Dennis Morgan, Virginia Mayo, Lucille Normand and Gene Nelson David Butler, director

• TED MCCORD, "Force Of Arms," with William Holden, Nancy Olson, Frank Lovejoy Gene Evans, Dick Wesson. Michael Curtiz, director.

• SID HICKOX, "Distant Drums," with Gary Cooper and Mari Aldon Raoul Walsh, director

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IN

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1951 AMATEUR

FILM COMPETITION

Will Be

Announced

In the

MAY

I S S U E

TELEVISION FILM

(Continued from Page 159)

Paul Ivano, A.S.C., Green Film Corp.

Allan Seigler, Jerry Fairbanks Prodns.

Kenneth Peach A.S.C. Jerry Fairbanks Prodns.

Benjamin Kline, Bing Crosby Enterprises.

Joseph Biroc, A.S.C., Snader Telescriptions

Fred Jackman, Jr., A.S.C., Ralph Edwards' "Truth or Consequences" show.

James Van Trees, A.S.C., "Groucho Marx Show"

•

Karl Struss, A.S.C., has been invited to serve on the committee of judges which will evaluate entries for the annual Sylvania TV Awards.

USE OF REFLECTED LIGHT

(Continued from Page 159)

will project much smoother if the shots all have the same contrast ratio in common, although individual takes may not always be as effective as desired. A meter will also help secure more flattering skin tones when filming in color. A balance of 2:1 or 3:1 is usually a good standard for lighting with color film. A flatter lighting tends to add weight to your subjects, while a contrastier one often emphasizes unattractive features.

Controlled fill light, with the aid of reflectors, is perhaps most important in color photography where a darkened area appears even more separated from the highlight portions because of its deep color concentration. Shade or underexposure seems to transform colors to a new set of hues of much brighter saturation. In black-and-white photography, a dark area in a scene may be only a dark area on the screen, but with color film it becomes a deep concentration of some very particular color. Too, scenes filmed in color in shaded areas tend to show a blue overcast and a decided blue in the highlights.

Reflectors, properly used can easily brighten these dark areas and eliminate or subdue the bluish effect. Daylight actually is a mixture of sunlight (yellow-red) and the skylight (blue). Thus, the use of reflectors project the warmer sunlight into the shadow areas of subjects and scenes not directly illuminated by the sun, furnishing needed balance in the lighting and, where color film is used, a measure of color correction, too

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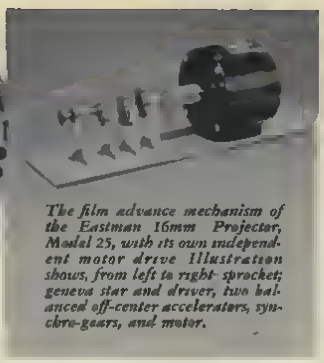

The film advance mechanism of the Eastman 16mm Projector, Model 25, with its own independent motor drive Illustration shows, from left to right- sprocket; geneva star and driver, two balanced off-center accelerators, synchro-gears, and motor.

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